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THE

GLASGOW MEDICAL JOURNAL

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GLASGOW MEDICAL JOURNAL.

No. I. JANUARY, 1918.

ORIGINAL ARTICLES.

AN EXPLANATION OF COLOUR AND COLOUR-VISION.*

By CHARLES R. GIBSON, F.R.S.E.

THE object of this paper is to explain a method which I have found very helpful in simplifying the subject of colour and colour-vision, and also to throw out a tentative suggestion as to the real connection between the waves of light and the consequent impulses in the optic nerves. In order to make these points intelligible and of interest to the general audience, I propose giving an explanation of colour and colour-vision.

It is difficult to think of any subject in which there is a greater confusion of ideas than that of colour, and yet there should be no real difficulty, if one only keeps the physical, the physiological, and the psychological aspects separate from one another. The bald statement that colour does not exist outside

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* From a paper read before the Royal Philosophical Society of Glasgow, 5th December, 1917.

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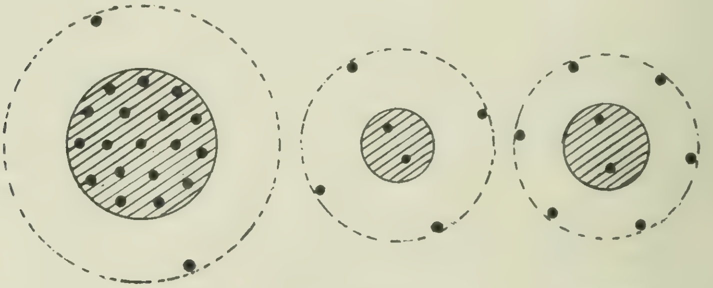
of ourselves is not very helpful, but if we form a clear conception of what is taking place in the external world, the difficulty should disappear.

The advent of the electron theory has given us the means of building up a very reasonable explanation of the physical aspect of colour. Although we are not concerned at present with the constitution of matter, it will be of assistance to picture what an atom of matter is now supposed to be. We picture the atom as being composed of nothing but positive and negative electricities. We imagine a core of positive electricity (whatever that may be), and embedded in it a number of particles of negative electricity, each particle of which is called an electron. Around this central core we picture a ring of satellite electrons, revolving at an enormous speed, approaching the velocity of light.



Calcium. Carbon. Oxygen.

It is these rings of revolving electrons in which we are interested this evening, as they play an all-important part in the subject of colour. It may be remarked in passing that although the core of positive electricity is hypothetical, and although the arrangement of the electrons is also hypothetical, the real existence of the electrons has been proved beyond a shadow of doubt.

What, then, is the part played by these rings of revolving electrons in the phenomena of light and colour? A simple analogy, from the realm of sound, may be helpful. If we take a ring or hoop of iron, and by striking it we cause the particles of iron to vibrate to and fro, they set up a series of waves in the surrounding ocean of air, and these air-waves impinging upon the drum of the ear produce certain sensations which we describe as sound. In similar fashion we can imagine that if a ring of revolving electrons is caused to vibrate, it will set up a series of waves in the surrounding æther of space, and these æther-waves, impinging upon the retina of the eye, produce certain sensations which we describe as light. And so we picture in the far distant sun, atoms of matter each with a little ring of electrons revolving around it. We think of these electrons being kept in a constant state of vibration, so that they send out incessantly a continuous series of æther-waves, which on their arrival on this planet produce certain sensations within us. In the case of a self-luminous body, such as the sun, a flame, an electric glow-lamp, or a piece of white-hot metal, the particles of matter are kept in a violent state of vibration, which constitutes the condition of intense heat. It is not difficult to imagine a consequent vibration in the electron rings surrounding the atoms of which these vibrating particles of matter are composed.

If we consider a body which is not self-luminous, we find that the electron theory gives us a most interesting picture of how such a body reflects light and colour. Another analogy from the realm of sound will be helpful. Most of you will know of an interesting laboratory experiment with two sets of tuning-forks. If we take two forks of the same pitch, and we cause one of them to vibrate vigorously, we hear that the neighbouring fork has been set into vibration. It is clear that the air-waves from the first fork have impinged on the second fork, and thrown it into a similar state of vibration, so that it is able to send out exactly similar air-waves on its own account. If we had a group of forks (a variety of pitch) only those forks of exactly the same pitch as the sounding fork would respond. In similar fashion we can imagine vibrating electrons in the sun, or other source of light, causing æther-waves to fall upon electrons in any object around us, so that these electrons are thrown into a similar state of vibration enabling them to send out exactly similar æther-waves, which, falling upon our eyes, stimulate our vision. Thus, the electron theory has provided us with a new explanation of the reflection of light; it is not a simple case of rebound, but is analogous to the behaviour of the two tuning-forks. In most cases the electrons cease vibrating the moment that the incoming æther-waves cease to fall upon the object, but there are interesting exceptions. If the electrons in an object should continue to vibrate after the exciting light has been withdrawn, that object ought to continue to send out light when placed in the dark. Zinc sulphide is one such substance, and after being exposed to light it continues to shine in the dark; we say it is phosphorescent, and you are all familiar with this phenomenon, although you may not have been aware of the inner meaning of it. You are also aware that if the phosphorescent body is left sufficiently long in the dark it will cease to give out light, and from this you will be able to predict that its electrons have ceased to vibrate. Another exposure to the æther-waves of light will soon set the electrons in motion again. The point of interest to us at present is that the so-called reflection of light is due to the presence of responsive electrons in the surface of the object which reflects the light.

We have no difficulty in realising that light is nothing more or less than waves in the æther of space, but if all æther-waves were exactly alike in frequency there would be no such thing as colour. Reverting to the realm of sound, it is clear that if all particles of matter vibrated at exactly the same rate, producing air-waves of only one frequency, there could be no such thing as music: there would be no variety of pitch.

Here is a simple experiment which may be helpful by way of analogy. Resting on this sounding-box are four steel bars of different sizes. If I strike these so that their particles are thrown into a state of vibration, each bar sets up a different frequency of air-wave. The numbers of vibrations per second are 400, 500, 600, and 800. These rates of air-waves falling upon our ears produce the four distinct sensations which we have just experienced. Our different sensations of colour are due to different frequencies of æther-waves falling upon our eyes. We may carry the analogy further. Here we have a short piece of steel wire, arranged so that it will vibrate 400 times per second. If I gently stroke each of these four bars with the leather tip attached to the end of the wire, I find that there is only one of the bars which will respond, and that is the one capable of vibrating 400 times per second. By arranging similar wires with frequencies of 500, 600, and 800 vibrations per second respectively, we can set each bar into a state of vibration. In similar fashion we may picture æther-waves of a definite frequency falling upon an object, and stimulating only those electrons capable of vibrating in exact sympathy with the exciting æther-waves. Here we have a wooden board, the surface of which has been covered with a pigment containing only electrons capable of vibrating 400 billion times per second, and thus stimulating only our red sensation. If we throw the light of the lantern on to the board, we are now bombarding it with the great variety of æther-waves which constitute white light. If the surface of the board contained electrons capable of responding to all these different frequencies, the board would set up æther-waves of the same varieties, and we should have the sensation of white light. The surface of this sheet of paper does contain electrons capable of responding to all the different frequencies, but the wooden board is unresponsive to all æther-waves excepting 400 billion per second. Suppose we subtract from the white light of the lantern all the æther-waves of 400 billion per second, then there ought to be no response at all from the surface of the board. The operator will place in the lantern a screen through which none of this particular frequency of wave can pass, while all the other rates of waves can pass freely, and now you see that there is no response by the electrons in the surface of the board, which is now black. When I place my hand in front of the black board, you see that there is still plenty of light coming from the lantern.

It will be very helpful if you realise that the colour is not part and parcel of the object. This board is neither black nor red, although it is common practice to describe it according to the sensation which it stimulates. At present (minus red light), you naturally call it black. But now (white light) you say it is red, yet you must admit that no change whatever has taken place in the board itself. When this board was white wood, its surface was capable of responding to all the variety of æther-waves, which are contained in the white light of the lantern. Its surface has been covered with a certain chemical pigment, which can only respond to those waves which stimulate our red sensation. If we take away these particular waves, then there is no response. The change in colour is striking, but it is clear to you that it is dependent entirely upon a change in the æther-waves, and not in the board. Therefore the colour does not belong to the board.

In pre-war days I suggested the following analogy:—The relationship of light to colour is the same as that of a flying bullet to the pain which it produces in the wounded soldier. The vibrating electrons are firing off æther-waves (light), and these stimulate a sensation (colour) within us. It would be ridiculous to describe the flying bullet as "pain;" it is as ridiculous to describe the æther-waves as "colour." White light is not made up of a variety of rays of different colour; white light is composed of invisible æther-waves of different frequencies, and when all this variety of æther-waves impinges upon the retina of the eye, it stimulates that sensation which we describe as white.

The rates of vibration, or what we term the frequencies of these æther-waves, which affect our vision, are all among the hundreds of billions per second. If you will pardon a diversion for a moment, I think it may interest you to try and realise the enormity of such rates of vibration. It is a mistake to suppose, as I have found some people do, that we cannot realise the difference between millions and billions. Elsewhere I have used this analogy. Imagine a tank or cistern containing one million peas, and picture some clockwork arrangement which would allow one pea to fall from the tank at the end of each second of time. By simple arithmetic we find that the millionth pea would leave the tank at the end of 11½ days. Again, imagine a tank containing one billion peas, which we in Great Britain reckon as one million million. We imagine the same clockwork arrangement counting out one pea per second, and our arithmetic tells us that the billionth pea would not leave the tank till the end of 30,000 years. So that a million is to a billion as 11½ days are to 30,000 years. The lowest rate of æther vibration which affects our vision is 400 billion per second, and to count out that number of peas, our clockwork tank would take 12 million years, whereas in Nature we have vibrating electrons cramming the counting of 400 billion into one second of time.

We have seen that if the electrons send out æther-waves at the rate of 400 billion per second, we experience that sensation which we describe as red. To call these æther-waves rays or waves of red light is to speak as though colour existed outside of ourselves, and yet to refer to them constantly as "waves of a frequency of 400 billion per second which stimulate our red sensation" is not very convenient, so that when I have occasion to refer to them again I shall speak of them as R. waves. The waves of 570 billion per second which stimulate our green sensation will be called G. waves, and those of 750 billion per second which stimulate our blue sensation will be called B. waves. The Young-Helmholtz theory suggests that we have only these three primary sensations—red, green, and blue—and that all other colour sensations are combinations of these. If all three sensations are stimulated simultaneously, we have the sensation of white.

[At this point the author gave a demonstration of what the colour-blind see. The great majority of the colour-blind being "red-blind," their case was selected for demonstration. The hall being darkened, the lecture-table was illumined by means of a lantern in which there was placed a "greenish-blue" glass slide, through which no R. waves could pass. Although the eyes of the audience still retained their faculty of responding to R. waves, there could be no stimulation of the red sensation, so that the audience were placed in a position analogous to the red-blind. In this "colour-blind" light, the audience were shown three pieces of cloth labelled (1) "blue," (2) "green" (3) "navy." These descriptions which had been given by two colour-blind men, appeared true descriptions, until the minus-red screen was withdrawn from the lantern, when the cloth labelled "blue" was seen to be a bright pink, the "green" was orange, and the "navy" was a bright red. Again, in the colour-blind light the audience were shown a number of colour-matches made by the colour-blind. Two hanks of "black" yarn appeared identical, two "light greens" were matched, as also two "dark greens," two "light blues," and two "dark blues." No one would wish to quarrel with the colour-blind men regarding these matches, until the minus-red screen was withdrawn from the lantern, whereupon it was seen that the following mistakes had been made:—A bright red was supposed to match a black; a yellow to match a light green; an orange to match a dark green; a pink to match a light blue: a rose to match a dark blue. A coat, which in the colour-blind light appeared black, and which a colour-blind man had agreed was suitable for wearing at a funeral, was found to be made of bright scarlet cloth with black collars and cuffs. By way of explaining these phenomena, a large spectrum was thrown upon the lantern screen.]

To make the meaning clear to all, we might have a look at Newton's great discovery, the separating out of all the different frequencies of æther-waves contained in ordinary white light. You know that when we pass æther-waves through a glass prism, they are bent out of their normally straight path. The higher the frequency of the waves the more bending do they suffer. Here we see that the R. waves bombard the screen, and finding responsive electrons, are reflected to our eyes and produce the sensation of red. As the æther-waves increase in frequency, they are bent farther from their straight path, so that they fall farther along the lantern screen. Here we have the G. waves producing the sensation of green. Between these two frequencies there is every possible variety of frequency from 400 billion to 570 billion per second. These waves of intermediate frequency stimulate both the red and the green sensations, producing that sensation which we describe as yellow. The B. waves fall farthest along, being of highest frequency. Between the B. waves and the G. waves are intermediate frequencies which stimulate both the blue and green sensations, and produce that sensation which we call greenish-blue.

If we were to bombard the lantern screen with "red" light, and with "green" light from a second lantern, we should stimulate both the red and green sensations, and the screen would appear yellow. "Blue" light added to "green" light would produce the sensation of greenish-blue. "Red" light added to "blue" light would produce the sensation of crimson-pink. If we were to produce a second spectrum, and cause its red to overlap the blue of the first spectrum, we should have the sensation of crimson-pink.

Now, I think we shall have no difficulty in understanding why the colour-blind men made the mistakes which I have demonstrated. The following is a method which I have adopted in order to simplify the subject:—

$$\begin{array}{lllllll}
\mathrm{R} & & \mathrm{G} & & \mathrm{B} & & \\
\mathrm{R} & (\mathrm{Y}) & \mathrm{G} & (\mathrm{G\,B}) & \mathrm{B} & & \\
\mathrm{R} & (\mathrm{Y}) & \mathrm{G} & (\mathrm{G\,B}) & \mathrm{B} & (\mathrm{C\,P}) & \mathrm{R}
\end{array}$$

$$\begin{array}{lllllllllll}
\mathrm{R} & + & \mathrm{G} & + & \mathrm{B} & = & \mathrm{W} & & & \\
\mathrm{R} & + & \mathrm{G} & & & = & \mathrm{Y} & = & - & \mathrm{B} \\
 & & \mathrm{G} & + & \mathrm{B} & = & \mathrm{G\,B} & = & - & \mathrm{R} \\
\mathrm{R} & & & + & \mathrm{B} & = & \mathrm{C\,P} & = & - & \mathrm{G}
\end{array}$$

The three primary sensations are represented by the letters R. G. B. The second line is easily remembered, as it is the order of the colours in the spectrum—red, yellow, green, greenish-blue, and blue. In the third line I have added the result of overlapping blue and red lights, which produce a crimson-pink sensation. The fourth line denotes that red and green and blue stimulate the sensation of white. The next line, red and green = yellow, is easily remembered by the position of the yellow in the spectrum, as also green and blue = greenish-blue, and the only tax on the memory is that blue and red = crimson pink. Now, it is easy to follow the mistakes of the colour-blind men. We shall deal only with the red-blind man, as the great majority of the colour-blind are only blind to red.

We show him a yellow object which is sending out æther-waves capable of stimulating both red and green sensations, but as he is blind to red, only his green sensation is stimulated; so he places the yellow object alongside of a green one, and tells us that they match each other. We show him a greenish-blue object, but there is no difference of opinion here, as there is no red in the question. We next show him a crimson-pink object capable of stimulating both blue and red sensations, but having no sensation of red the colour-blind man receives only the sensation of blue, so he tells us that the pink matches the blue.

In John Dalton's paper to the Philosophical Society of Manchester in 1794, speaking of his own colour-blindness, he said that formerly when he called pink "sky-blue," and incurred the ridicule of others, he always joined in the laugh himself, for at that time he thought the difference was one of words and not ideas. He never imagined that he was seeing the so-called "pink" object anything different from what other people saw it, but that they were merely giving some refinement of description which seemed to him entirely unnecessary.

When we show the colour-blind man a pure-red object, such as this board or this coat, he receives no colour sensation at all, and so he believes the objects to be black. If the object is a crimson or a rose colour, he will, of course, see it as a blue, as was the case with this yarn. Among other things, this method makes it clear why the artist's and the printer's "primaries" are crimson-pink, greenish-blue, and yellow. It is very confusing to speak of the artist's "primaries" as red, blue, and yellow, for his red and blue "primaries" are not the red and blue "primaries" of the spectrum. The whole affair is very simple if we keep in mind what the operations of the artist and printer are. So far we have been speaking of adding coloured lights together, and to do so, we must of course have a separate source of light for each colour. The artist has only one source of light to deal with.

Let us consider the position of the colour printer. He sets out with a sheet of white paper, and when white light falls upon its surface, he has there the sum total of all the colour-producing æther-waves which he can ever hope to reflect to our eyes. To simplify matters, we may say that in the white light reflected by the paper he has R., G., and B. waves, capable of stimulating all our colour sensations. He can add nothing: he can only subtract. By covering the surface of the paper with an ink, which contains no electrons capable of responding to B. waves, he can subtract these B. waves from the reflected light, sending to our eyes only R. and G. waves. Therefore the printer uses yellow as one of his primaries, as it gives him the means of subtracting blue.

To subtract G. waves, he must reflect only R. and B. waves, and those two sensations stimulated simultaneously give us that sensation which we describe as crimson-pink. Hence, crimson-pink is one of the printer's primaries and enables him to subtract green. Likewise, to subtract red, he must stimulate only the green and blue sensations, so that greenish-blue is another of his primaries. With these three primaries—yellow, greenish-blue, and crimson-pink—he is fully equipped to manipulate the æther-waves which constitute white light.

You are doubtless aware that the modern colour printer uses only these three printing inks in order to produce all the variety of colour which we see in his pictures. The overlapping of these three inks in different proportions enables him to produce every variety of colour. You are aware also that until the invention of the three-colour process as many as forty different printing inks were required to produce some illustrations. The block-making for the three-colour process is one of the triumphs of photography.

Dealing with the simple colours, we see that when he prints yellow and superimposes greenish-blue, he subtracts both blue and red, so that only green is reflected. Again, when he superimposes greenish-blue and crimson-pink inks, he subtracts red and green, leaving only blue to be reflected. When he superimposes yellow and crimson-pink inks he subtracts blue and green, leaving only red to be reflected. And when he superimposes the three inks—yellow, greenish-blue, and crimson-pink —he subtracts blue, red, and green, leaving nothing to be reflected, so we have a black paper.

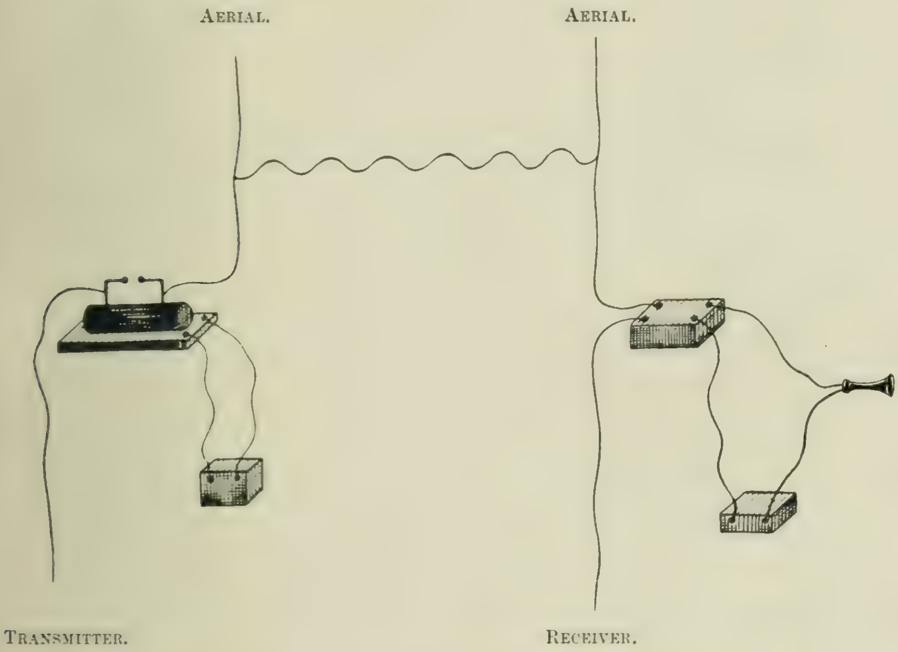
In closing, I wish to suggest a possible solution of the connecting link between the æther-waves and the nerve-impulse which excites the sensation; in other words, the mode of transference from the physical to the physiological. We began by considering the physical aspect of light, the vibrating electrons giving rise to the æther-waves. But how do the æther-waves stimulate the nerve-impulse? It has been known for a long time that the really sensitive parts of the retina are what are described as the rods and cones, which are very fine extensions of the optic nerve. It is the cones in which we are specially interested, as they have to do with the colour sensations.

In the eye we find that the fovea centralis of the central spot contains only these cones and no rods, and here the cones, which are packed very closely together, are of a more sensitive construction than the cones which occur throughout the rest of the retina. If these cones are really the active agents in the reception of colour, then we ought to be able to see the colours of objects much more easily when the image of the object falls upon the central spot. It is easy to prove that this is the case, for if you gaze fixedly at an object directly in front of you, and bring some brightly-coloured object into the field of vision, holding the object to one side so that its image will fall far away from the central spot, you will be able to see the object but not its colour. As you bring its image nearer to the central spot you can gradually distinguish the colours, until the image falls directly upon the central spot, when you have the full sensation of colour.

It is just as though the cones were "tuned" specially to respond to definite wave-frequencies. Outside of the central spot the cones are fewer and of a heavier construction, but there we have the rods. These rods will respond to a faint light, to which the cones in the central spot fail to respond. For instance, a faint star, say in the Pleiades, may be seen while the eye is directed to a neighbouring part of the heavens—that is to say, when the light from it is falling on the rods; but when one turns the eye to look directly at the faint star, thus bringing its image on to the central spot, the star cannot be seen at all. Our present interest lies in the cones.

No one can imagine that the gross matter of these cones is capable of vibrating in response to the æther-waves of light. The suggestion which I desire to put forward is that the function of these æther-waves is to disturb the electrons contained in a chemical substance within these cones. We may take as a suitable analogy the action of an electrolytic receiver in a wireless telegraph system.

Let us consider the analogy. Here we have the wireless transmitter which may consist of a battery or a dynamo with some sparking apparatus, which when discharged causes the electrons in the aerial wire to surge to and fro, or, in other words, to vibrate. Many of you know that an electric current is a handing on of electrons from atom to atom of the conductor, an alternating current being due to a to-and-fro motion of these electrons. These vibrating electrons set up æther-waves of exactly the same nature as those we describe as light, but of a very much lower frequency than those to which our eyes can respond. These wireless æther-waves impinge upon an aerial at the distant receiving station, and cause the electrons in the receiving aerial to vibrate in sympathy with these in the sending aerial. The receiving aerial is connected to a cell containing some chemical solution, electrons of which are disturbed by the movements of the electrons in the aerial. I prefer to call it a chemical disturbance or dissociation rather than a chemical change. There the function of the incoming æther-waves ceases, having dissipated their energy in disturbing the electrons in the cell. But there is a local battery sending an electric current through the electrolytic cell, and in this circuit is placed a telephone receiver. So long as there is a steady electric current flowing, there is no disturbance in the telephone receiver: no sound is heard. But when the electrons in the cell are disturbed (*via* the aerial), the local electric current is interrupted, and a click is heard in the telephone. You can see how it is possible to send signals, by controlling the discharge at the sending station, according to the Morse Code, so that a series of long and short clicks, representing the letters of the Morse Alphabet, can be heard at the receiving station. So much for the analogy.



Here we have a source of light, an electric glow-lamp, which sends out a series of æther-waves of exactly the same nature as the "wireless" waves, but more frequent. These æther-waves fall upon the cones in the retina of the eye, and disturb the electrons in the chemical substance contained in the cones, and there the function of the incoming æther-waves ceases. But a local nervous current is interrupted, and sends signals to the sensorium. We might suppose three distinct classes of cones, all anatomically identical but containing different chemical substances, in which were electrons corresponding to R., G., and B. waves respectively. This arrangement would be similar to the Young-Helmholtz three sets of nerve-endings, but it is not necessary to suppose three different sets of cones; we may suppose each cone to contain some electrons capable of being disturbed by the R. waves, other electrons by the G. waves, while others respond to B. waves.

If only R. waves fall upon the cone, then only the sympathetic electrons are stimulated, and a certain definite interruption occurs within the cone, causing a definite change in the local nervous current which on reaching the sensorium produces that sensation which we describe as red. In similar fashion we have the G. waves and the B. waves disturbing their sympathetic electrons. But it may be questioned if a nerve-impulse can be of such a complex nature as to transmit three different stimulations simultaneously, so as to excite the red, green, and blue sensations. While this would be necessary with the Young-Helmholtz theory, I suggest that instead of there being a combining of three primary sensations in the sensorium, there may be a combining of three primary interruptions in the cones, or elsewhere in the transmitting system. Or it may be that while R. waves (400 billion per second) produce a certain definite chemical disturbance in the cones, and G. waves (570 billion per second) produce a different disturbance, and B. waves (750 billion per second) produce a third definite disturbance, it is possible that R. and G. waves acting together produce another definite disturbance, which controlling the nervous current gives us that sensation which we call yellow. All these frequencies—R., G., and B.—when acting simultaneously, produce yet another definite chemical disturbance, which gives rise to that sensation which we call white. The three primaries still exist, but I suggest transferring them from the psychological to the physiological.

Whether this theory which I have put forward does or does not give a true solution of the problem, I think my meaning will be clear if you keep in mind the analogy of the electrolytic cell in the wireless telegraph receiver. In any visible object there are vibrating electrons sending out æther-waves. These fall upon the cones, and the impact of the æther-waves causes disturbances in the electrons of the chemical contents of the cones. This chemical disturbance controls the local nervous current and stimulates the sensations. Further, I suggest that the cones are analogous to the tuned receivers in wireless telegraphy and respond only to definite wave-frequencies, thus giving us the definite sensations of colour, whereas the rods are analogous to untuned receivers, capable of responding to any medley of æther-waves and therefore failing to give us any definite colour-sensations, but capable of responding to a faint medley of waves to which the tuned receivers (the cones) are unresponsive.

I venture to suggest that this theory explains the following phenomena:—

1. When a piece of iron is heated gradually in the dark, there is a sensation of grey light before the iron becomes luminous (red hot). This would be due to the untuned receivers (the rods) responding to a medley of feeble waves which do not affect the cones at all.

2. It is well known that a spell of over-smoking may produce what is called "tobacco amblyopia," rendering the person red-blind for some little time. My theory suggests that the constant inhalation of the tobacco smoke causes the blood-vessels in the lungs to absorb a poison which alters the chemical solution in the cones, rendering the R. electrons non-responsive to the R. waves, until the poison works out of the system.

3. John Dalton believed his colour-blindness to be due to some difference in the chemical composition of the vitreous humour in his eyes, and stated in his will that a *post-mortem* examination was to be made to settle this point. His eyes were found to be to all appearance perfectly normal. My theory suggests that it is merely a difference in the chemical condition of the substance in the cones which is the cause of colour-blindness.

4. The present Marquis of Salisbury has stated that he is distinctly colour-blind at times, although he is usually quite normal in colour vision, and yet he is not conscious of any reason for this. My theory suggests that this temporary

colour-blindness is due to a temporary change in the condition of the chemical substance in the cones.*

In the discussion which followed the reading of the paper, one speaker pointed out that although our sensation of white is due to a combination of the three primaries, we are not conscious of any presence of red, green, and blue in white. That seems to me to be in favour of the suggested transference of the "primaries" from the sensorium to the cones or transmitting system. I suggest that there is no combining of sensations; each different colour-sensation is due to a different interruption of the local nervous current. The said interruption is due to the stimulus of one or more frequencies of æther-waves. The whole variety of possible interruptions may be produced by R., G., and B. waves.

It was suggested that the position and direction of the cones offered an obstacle to the above theory, but even if the æther-waves could not directly reach the cones, they might stimulate an electron disturbance which could reach the cones. One speaker referred to the possibility of fixing the retinal image in a freshly-killed ox, but I think there is no question of this being due entirely to the visual purple which plays no part in colour vision. The phenomenon of the retinal image has never appealed to me as having any bearing upon the subject of vision; the image seems to me to be analogous to the sand figure upon a Chladni plate; the figure and the sound are both due to the vibrations of the plate, but the figure does not produce the sound. The retinal image and the sensation of vision are both due to the æther-waves, but the image does not produce the sensation.

Some questions were asked regarding the requirements for tuning the wireless receiver, and while these were very briefly explained it was pointed out that the wireless apparatus was merely suggested by way of analogy. Doubtless the wireless invention is but a very clumsy affair compared to the work of Nature.

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* It has been suggested that the phenomenon, as stated by the Marquis of Salisbury, may be purely psychological.

A MOST UNUSUAL CASE OF PATHOLOGICAL FRACTURE —MYELOID SARCOMA AND CYSTIC DISEASE OF BONE.

By A. G. FAULDS, M.B., C.M.,

AND

JOHN H. TEACHER, M.D.

A MOST unusual and interesting case of pathological fracture of the femur occurred in the Glasgow Royal Infirmary recently, the facts concerning which not only show the unforeseen difficulties which may present themselves to the surgeon, but also reveal the value of pathological investigation in elucidating the cause thereof.

A married woman, aged 30 years, was admitted into the wards of the above institution from a cottage hospital suffering, it was said at the time, from an ununited fracture.

It appears from the history of the case that the woman was going downstairs, three months before her admission here, when her "leg went under her." She was unable to rise, and she felt that her thigh was broken. She was taken to the cottage hospital where the splint was applied, and she remained there for nearly three months. It was found, however, on attempting to get up, that her leg had not recovered.

On admission to the Royal Infirmary on 30th July last her temperature was 99·8° F.; pulse, 100; respiration, 20. *X*-rays showed a fracture somewhat comminuted about the junction of the upper and middle thirds. It was evident from the skiagram that disease had been the cause of the fracture, as the rays had passed more easily through the seat of the fracture and gave less definition of the bony outline than about the ends of an ordinary fracture.

On 27th August Mr. A. G. Faulds cut down on the seat of fracture with the object of removing a piece of the bone and surrounding tissue for diagnosis by the pathologist. The bone and surrounding tissue was of a yellow-greenish hue, and completely different from the normal colour of bone about a fracture. Two small portions were removed very easily, the bone being abnormally soft.

As it was apparent that there would be some days' delay before a report could be obtained, Mr. Faulds decided, on clinical grounds, to amputate as high up as possible, if he could get sound bone. As a matter of fact, the tissue removed showed only bony callus.

On 28th August, the usual operation of amputation of a thigh through the upper third was entered upon, but when the surgeon reached the bone, he found the whole shaft from the seat of fracture to beyond the trochanters was diseased in so far that it was extremely fragile, had the appearance of being eaten away, and the colour of rotting oak. On putting his knife against the bone, he found that he could easily pierce the outer shell, and testing it in this way up to the trochanters he found the same condition pervading the whole upper part of the shaft. The bone was then dissected up to the acetabulum, when, on manipulating the limb, the head broke off at the anatomical neck like a rotten piece of wood, and remained in the acetabulum.

After opening the capsular ligament, the head of the femur was removed and the limb disarticulated. Mr. Faulds now thought the case to be one of osteo-malacia.

The patient on admission was of an unhealthy appearance, being sallow, and a low cachectic complexion. She looked like a patient suffering from pernicious anæmia or from some form of toxæmia. The Wassermann reaction was negative.

After the operation patient steadily improved, and was dismissed very much better, and with the stump healed, on 23rd October, complaining, however, of the same kind of pain in her remaining thigh which she had suffered from before the fracture.

Pathological report (Glasgow Royal Infirmary Ward Specimen 7,526 and 7,536).—The limb had been disarticulated at the hip, and the head of the femur was detached, having broken off through the neck. The whole of the neck was occupied by cavities with thin bony walls, some of which contained blood-clot, while others were empty. The cysts practically stopped at the epiphyseal line, the actual head presenting a fairly normal appearance.

There were cavities in the lower fragment of the neck, and the shaft down to the fracture was irregular with cavities in it, and rounded irregular depressions on the surface lined with dense bone. The fracture had been complex and a false joint had formed below the main upper fragment, and there was fibrous union between the portions below that and the lower main fragment. There was a comparatively small mass of callus, which consisted of rather soft spongy bone and fibrous tissue. There was no apparent tumour.

The tibia, fibula, and bones of the foot were also dissected out. In the tibia there were two areas which yielded under the finger; both were in the inner surface. They were covered by periosteum, and were of dark colour. No abnormal areas were found in the other bones.

After hardening in formalin the bones were cut in the following manner:—

1. The upper part of the femur was sawn in the plane of the axis of the neck.

2. The lower fragment was sawn from back to front towards the outer side in order to traverse the healed fracture, which was present between the upper and middle third.

3. The tibia was sawn from side to side to traverse the soft, dark patches.

All the bones were sawn so easily that it seemed they could almost have been cut. The outside of the shaft was hard, but very thin. The marrow cavity of the femur was filled with fatty tissue, and red or brown tissue in varying amount, most of which looked like red marrow, and microscopic examination confirmed this. The cystic condition was very advanced in the whole of the upper part of the femur, and there were two or three small areas of it below the fracture; it was present at the soft spots in the tibia. There was nothing but atrophy in the bones of the foot.

Sections were prepared from the whole extent of the larger patch in the tibia. It was necessary to decalcify, although the portion was cut out easily with the knife. The patch measured about 3 cm. in the length of the tibia by about 1·5 cm. in breadth, and was of oval shape on the surface of the tibia. It extended almost across the medullary cavity, being about 1·5 cm. in depth. The outer surface was flush with the surface of the tibia. It was composed almost entirely of thin-walled cysts of various sizes, with well-defined firm bony walls. Some parts were denser, appearing like an open cancellous bony tissue. The cysts completely replaced the dense wall of the tibia in both areas.

Some of the cysts contained bloody coagulum or actual blood-clot. Others contained a loose, yellowish coagulum, the contents having apparently been serous. Microscopically, the amount of bone in the tissue was very small, being principally in the form of thin lamellæ lined on either side by a little dense connective tissue, and the cysts were lined by endothelium. The cysts, in fact, had much the appearance of dilated lymphatics. Only one small brown nodule projecting into a cyst showed the structure of myeloid sarcoma, but traces of this tissue, apparently undergoing fibrosis, were seen at one or two other points.

Six portions of soft tissue were taken from various parts of the femur, all of which proved to be red marrow, except one small brown mass which was picked out of the side of a small cyst. This was myeloid sarcoma. A mass of bony tissue from the fracture presented the structure of weak bony callus.

Cases of this kind are extremely rare, and the present is the first that has come within the experience of either author. The Museum of the Royal Infirmary, however, contains a specimen, presented in 1913 by Dr. H. C. Patrick, of Shanghai, which appears to be essentially of the same nature. A Chinaman had an oval tumour of the lower end of the right radius, about the size of a cocoanut. It felt like a bony tumour in some parts, was soft in others, and at two points the soft tissue had penetrated the skin and was fungating like a sarcoma. The patient, nevertheless, had free use of the hand and wrist.

In hope of being able to remove the tumour, which was a myeloid sarcoma, without amputation, a first attempt was made in that direction; but very soon it was obvious that the whole of the radial head was diseased and the tendons so involved as to compel amputation, despite the fact that no tendon was fixed. The posterior wall of the tumour has been cut out, showing a large cyst with smooth, glistening bony walls. The wall varies in thickness up to about 1 cm. and the inner lining of bone is almost complete, the sarcoma having nowhere penetrated it, but having grown only in an outward direction. Portions of the wall free from bone were submitted to microscopic examination, confirming the diagnosis of myeloid sarcoma of a fairly cellular type. The inner surface of this was covered by a layer of dense connective tissue lined apparently by endothelium.

We have made no attempt in the present circumstances to examine the literature of the subject. A very interesting account of this disease is given in the last (sixth) edition of Bland-Sutton's *Tumours, Innocent and Malignant* (1917, chapter vi, p. 79. London: Cassell & Co., Limited).

OBSTRUCTIVE ALIMENTARY TOXÆMIA.

By ARNOLD JONES, M.B.,
Surgeon, Ayr County Hospital.

Alimentary toxæmia is a subject fraught with so many perplexing phenomena that it is quite impossible in an article of this scope to give even a summary of the various theories as to causation.

Bacteriologists, bio-chemists, physicians, surgeons, and dentists have put forward the results of their researches and practices. The multiplicity of these only proves the limitation of our knowledge. The knowledge of them multiplies the means which may be tried to assist the sufferer. I believe that many cases are entirely obstructive, and that a careful examination will indicate not only the *cause* of the obstruction, but the *steps necessary* to effect a speedy cure.

The controversial subject of "Lane's Kinks and Bands" hardly falls within the limitations of this article, as I propose to deal with pathological causes only, which are met with and recognised in everyday practice.

Obstructive alimentary toxæmia may be acute or chronic. If acute, it is, or rapidly becomes, complete. If chronic, it is partial. I propose to deal chiefly with the latter variety, but it will assist greatly in our understanding of this variety if we review briefly the salient features of acute intestinal obstruction, or, as I prefer to call it, *acute obstructive alimentary toxæmia.*

A healthy man has his bowel suddenly blocked by a constricting band. He is desperately ill within a few hours. His abdomen is opened. Gangrene has not supervened. The band is divided and the abdomen closed. The whole operation has lasted a few minutes only. The prognosis for the next twenty-four hours is doubtful. He may recover, but occasionally death supervenes.

Why are these patients so desperately ill? Why are the first twenty-four hours critical? Why do many of them die? We assume that virulent poisons are produced and absorbed. We do not know the nature or origin of these, nor why the whole elaborate defensive system from the bowel mucosa to the antitoxic action of the liver and secretory glands should break down and fail. We believe, and I think rightly, that these patients are acutely poisoned by some toxin or toxins unknown, the production and absorption of which are dependent on the damming of the bowel. It is reasonable to assume that, when a bowel is partially blocked, the same toxins are produced and absorbed, although much more slowly. This produces *chronic obstructive alimentary toxœmia.*

In this variety the patient, instead of being rapidly poisoned, has his health slowly and insidiously undermined. System after system suffers until he is reduced to a state of chronic invalidism. The cutaneous structures suffer early. The skin loses its bloom. The hands and face may show patchy deposits of brown pigment. The hair may be dull, and break easily. The nails are brittle. The face is pasty in appearance and sallow in colour. The expression is one of misery. The furrows producing this are fixed. The countenance lacks vivacity. The eyes are heavy. This facies when present is absolutely characteristic, and enables one to classify these patients as easily as one can an acute abdomen from the "Facies Hippocratica." Fat absorption tends to take place. Many of these patients are painfully thin and scraggy, and feel the cold intensely. This fat absorption is probably responsible for the movable kidney so frequently present, and which forms so valuable an aid to diagnosis, as it is doubtful if it occurs apart from alimentary toxæmia. Visceroptosis of varying degrees may develop.

The abdomen is usually lax and flaccid. Gurgling and splashing are felt and heard on palpation. Should occasion arise to perform laparotomy, one is struck by the softness of the structures forming the abdominal walls. Skin and subcutaneous tissue are so lacking in tone that the wound edges tend to invert rather than gape. The fascia is soft and friable, and lacks its pearly lustre. The muscles are wasted and anæmic. The parietal peritoneum tears so readily that it is difficult to stitch. If the toxins invade the articular system rheumatoid arthritis results, as pointed out by Lane and others. Hepatic insufficiency supervenes. The thyroid may suffer and goitre develop. Occasionally the kidneys are affected and albuminuria results.

The nervous system suffers in the majority of patients. Hysteria, various phobias, morbid thoughts, depression, neuralgic pains, altered sensations, defective memory, and "funny feelings" are common. The reflexes are exaggerated. How often do we regard these cases as suffering from "neurasthenia" —a term merely denoting a symptom complex, and used too frequently to cloak our ignorance. Just as chronic headaches should at once suggest an examination of the urine, so should "neurasthenia" lead to a search for an underlying cause. If one admits that a poison of a virulent character enters the blood-stream, there is practically no limit to the ravages that may be wrought.

Fortunately, *all* these symptoms are not exhibited by individual patients. The toxins show a selective influence, and it may be that this is determined by the blood-supply to different parts. One of my patients had a high colour and no cutaneous symptoms, but suffered intensely with her joints. I do not wish to convey the impression that the symptoms described are peculiar to the obstructive variety of alimentary toxæmia, but rather to emphasise the necessity of searching for an obstructive cause in all cases. I have operated on a considerable number, and the consideration of one or two will serve to illustrate my arguments.

Case I.—Mrs. M., aged 32 years, consulted me early in February, 1916, complaining of pain and stiffness in all her joints. So crippled was she that she had been confined to bed for three months prior to my seeing her, owing to her inability to walk or help herself. She had had prolonged anti-rheumatic treatment. Her health had been poor for years. Constipation was obstinate. Most purgatives had been tried, and latterly large doses of Epsom salts were taken every morning. She was hysterical, morbid, and irritable. Her memory was defective. The knee-jerks were exaggerated. Backache had troubled her for several years.

On examination, the metacarpo-phalangeal and phalangeal joints were swollen, painful, tender, and deformed. They could not be flexed. This same condition was present in several other joints. She was unable to walk. The abdomen was flaccid and lax. The right kidney was movable. The patient appeared well nourished, and had good colour. Vaginal examination revealed a well-marked retroverted uterus.

On rectal examination, the finger came against the retroverted uterus, and so striking was this that it almost suggested a rectal tumour. The uterus, by pressing on the bowel, reduced its calibre by more than half, and when fæcal matter from above pressed on the bulge thus formed, a still further narrowing would take place. I formed the opinion that the joint and other symptoms were the result of this—causing an obstructive alimentary toxæmia.

I corrected the uterine displacement by operation on 26th February. By April the joint condition had improved. By August all symptoms had disappeared. The joints could be moved freely and painlessly, and the patient could walk with ease and comfort. I recently wrote to ask how she was. She replied, "My health is excellent. I have never enjoyed good health until now. All nervous symptoms have gone and my memory is much improved. I rarely require purgatives, and, if I do, I take a half teaspoonful of Gregory."

This case is a striking example of chronic obstructive alimentary toxæmia. I believe that retroversion of the uterus is a frequent cause, and that the enormous benefit following its correction is chiefly due to the relief of the obstruction, and although this patient had backache for years, this case illustrates the need for a systematic examination, as I have seen cases where none of the ordinary uterine symptoms were present.

Case II.—Mrs. X., aged 49 years, consulted me early in 1916, complaining of persistent constipation with occasional obstructive attacks. During these attacks her abdomen became distended and peristalsis was visible. She had rheumatoid arthritis, with stiffness, pain, and swelling of her fingers and of her knees. Her nervous system was unstable. She suffered from extreme debility, being unable to walk for more than two or three hundred yards without being exhausted. She had had a severe puerperal sepsis thirteen years previously, and had never been well since.

On examination the typical facies was present. The finger- and knee-joints were swollen, stiff, and tender. Heart sounds were feeble, with auricular fibrillation. The urine was loaded with albumen. Tube-casts were present. An eminent specialist had given a grave prognosis on this condition, as it had resisted medical treatment. The tissues showed the usual changes, and the right kidney was movable. Rectal examination revealed a band stretched transversely across the lumen of the bowel, which was reduced in consequence to rather less than a third of its original calibre. The finger-tip could, with pressure, be insinuated between the band and the bowel wall on one side. It could be passed more easily on the other. The obvious course was to remove this band, but the patient's condition was so fragile, her margin of strength so small, that I refused to operate. I found, however, that by forcing my finger-tip through the narrow side of the band I was able to stretch it. This immediately led to better bowel action, and her general health improved somewhat. It was found necessary to repeat this manœuvre every two or three months, as by that time she had relapsed. As she was getting worse I ultimately decided to operate.

She took chloroform well. The band was tied at each end and removed. The patient was up within a week, and almost immediately commenced to improve. In three months she was taking five-mile walks. Her colour returned and the joint symptoms disappeared. Constipation ceased to trouble her. The most remarkable feature was the improvement in the urine which, before operation, had been loaded with albumen, and now showed only a trace. The improvement in all the tissues and organs was so striking that one would hardly recognise her as the same woman. Indeed, old friends told her that she had regained the looks and appearance she had before her marriage fourteen years previously.

This case illustrates the ravages of thirteen years slow poisoning due to obstructive toxæmia. Hardly a system or organ escaped. The removal of the simple cause produced results far beyond reasonable expectations.

Case III.—Mrs. Y., aged 39 years, complained of pains all over her body, general weakness, severe constipation, marked loss of memory, mental depression, various phobias, and morbid thoughts. She had frequently contemplated suicide as her life was so miserable. She had the typical facies and her tissues showed the usual changes. The right kidney was movable. There was tenderness and some thickening to be felt in the ileo-cæcal region. Medical treatment had failed. As an abdominal operation had been performed several years previously, I thought it possible that adhesions had formed and were causing obstruction. Unfortunately this patient was not *x*-rayed.

I opened the abdomen and found the ileo-cæcal junction buried in adhesions. The last 9 inches of ileum were distended. Ileo-sigmoidostomy was performed. The sigmoid immediately above the new junction was tucked in transversely by three layers of sutures, so that the lumen was almost occluded and a valve thus formed. A small space was left between the valve and the opposite bowel wall to permit of colon secretion passing down, but insufficient to allow fæcal matter to pass back into the colon. It was hoped in this way to prevent that distressing sequel of ileo-sigmoidostomy—regurgitation of fæces.

This patient improved almost immediately. The skin became clear and healthy. The numerous pains disappeared. The neurasthenic symptoms went, and in three months' time she declared herself a new woman. It is four years since she was operated on. No fæcal regurgitation has occurred, and the patient continues in perfect health.

This case illustrates obstructive toxæmia of the small bowel. I have been struck by the number of cases showing ileal stasis when a bismuth meal is photographed. It is impossible to say without a laparotomy if this is due to spasm at the ileo-cæcal sphincter, to actual narrowing, or to Lane's bands. Dealing with the latter has not yielded satisfactory results in my experience. I have recently thought of performing an operation at the ileo-cæcal junction similar to Finney's pyloroplasty, which would provide a free opening between cæcum and ileum. Such a procedure would establish a free drainage of the small bowel, and would be on more rational lines than short-circuiting or removal of the colon.

Summary.—1. Where a partial obstruction of bowel exists, virulent poisons are slowly produced and absorbed, and chronic obstructive alimentary toxæmia results.

2. This toxæmia may attack any system or organ, and produce such apparently divergent conditions as neurasthenia, rheumatoid arthritis, and nephritis.

3. Where the obstructive cause is found and dealt with, these intractable conditions are enormously benefited and frequently cured.

4. The typical facies, neurasthenia, movable kidney, defective memory, and constipation, are valuable diagnostic signs and symptoms.

5. Where a combination of these signs or symptoms is present, a thorough investigation of the intestinal tract should be undertaken to find an obstructive cause.

Obituary.

ON SERVICE.

Captain GEORGE HISLOP, M.B., Ch.B. Glasg., Royal Army Medical Corps.

We regret to announce that Captain George Hislop died of wounds at a hospital in Cairo on 28th November. Captain Hislop, who was a native of Glasgow, graduated M.B., Ch.B. in 1913, and joined the Royal Army Medical Corps on the outbreak of war. His parents reside at 125 Greenhead Street.

Captain JAMES M'DONALD MATHESON, M.B., Ch.B. Glasg., Royal Army Medical Corps.

We regret to learn that Captain J. M. Matheson has been killed in action. Deceased, who graduated at Glasgow University only a year ago, was a native of Ross-shire. He joined the Special Reserve immediately after graduation.

Captain JOHN YOUNG, M.B., Ch.B. Glasg., Royal Army Medical Corps.

We regret to announce that Captain John Young has died at the front from gas poisoning. Captain Young graduated M.B., Ch.B. at Glasgow University in 1906, and settled in practice at Ormskirk, Lancashire. He held a number of appointments in the locality, including that of physician to the Ormskirk Union

Hospital. Shortly after the outbreak of war he received his commission in the R.A.M.C., and was promoted Captain after one year's service.

ALEXANDER JAMES THOMSON SWANN, M.B., C.M. GLASG.,
WEST AFRICAN MEDICAL STAFF.

WE regret to announce that Mr. Alexander James Thomson Swann was drowned by the sinking of the s.s. *Apapa*, which was torpedoed by a German submarine. Mr. Swann, who was 44 years of age, was educated at Langside Academy and Glasgow University, where he graduated M.B., Ch.M. in 1898. Subsequently he received the Diploma of Public Health. He served as surgeon on H.M. transport *Jelunga*, and in 1900-1902 he was civil surgeon with the South African Field Force under General Sir Henry Rawlinson. Later, he was resident assistant medical officer at Croydon Borough Fever Hospital, and resident medical officer for Croydon and Wimbledon Joint Small-pox Hospital. In 1906 he was appointed medical officer, West African Medical Staff, Nigeria. He received honourable mention for his services in a punitive expedition in 1908. In the beginning of the present year he served in French Sudan. Mr. Swann had his home at Eddlehurst, Eastwood Avenue, Giffnock.

JOHN TAYLOR, M.D. DURH.,
WHITEINCH.

WE regret to announce the death of Dr. John Taylor, which took place on 29th November at his residence, Haldane Street, Whiteinch, after a short illness. Dr. Taylor studied medicine at Anderson's College and Glasgow University, and gained the Triple Qualification in 1879. Settling in Whiteinch very soon afterwards, he built up a large practice in that rapidly developing suburb. In 1895 the degree of M.D. was conferred on Dr. Taylor at Durham University.

JAMES PAUL LOW, M.B., C.M. Glasg.,
Alloa.

We regret to announce the death of Mr. James Paul Low, which took place on 16th November after a short illness. Mr. Low was a son of the late Mr. W. Barron Low, baker, Alva. He first qualified for the teaching profession, and was for two or three years schoolmaster at Blairingone Public School. Afterwards he passed through Glasgow University, and graduated M.B., C.M. in 1890. He began his professional career in Alloa, and soon built up a large family and friendly society practice. After the new Act came into operation Mr. Low had a panel of 1,200 patients. He was also medical superintendent of the Clackmannan County Fever Hospital, and medical officer of the three child welfare centres of the county, besides conducting ambulance and sick nursing classes in Alloa and Sauchie. The deceased, who was about 60 years of age, served a full term on the Alloa Burgh School Board.

CURRENT TOPICS.

Appointments.—The following appointments have recently been made:—

Royal Army Medical Corps (17th November): To be temporary Captain—Temporary Lieutenant J. Glaister, M.B., Ch.B. Glasg. (1905).

24th November: To be temporary Captains—Temporary Lieutenants P. R. M'Naught, M.B., Ch.B.Glasg. (1908): J. Cruickshank, M.D.Glasg. (M.B., 1908); W. Montgomery, M.B., Ch.B. Glasg. (1913).

29th November: To be temporary Captain—Temporary Lieutenant D. F. Riddell, M.B., Ch.B.Glasg. (1903).

10th December: To be temporary Captains—Temporary Lieutenants C. J. C. Macquarie, M.B., Ch.B.Glasg. (1907); G. N. Kirkwood, M.B., Ch.B.Glasg. (1905).

28th November: To be temporary Lieutenants—Richmond Steel, M.B., Ch.B.Glasg. (1909); G. Ferguson, M.B., Ch.B.Glasg. (1902); W. Crerar, M.B., Ch.B.Glasg. (1899).

Territorial Force, R.A.M.C. (3rd December): Captain (temporary Major) J. M. Hunt, M.B., C.M.Glasg. (1881), to be acting Lieutenant-Colonel whilst performing the duties of Administrator of a General Hospital.

Special Reserve of Officers, R.A.M.C. (8th December): To be Lieutenant—K. J. A. Gillanders, M.B., from Glasgow University O.T.C.

Honours for Glasgow Graduates.—During the past month the following Glasgow graduates have received the honours preceding their names:—

Bar to D.S.O.: Temporary Captain R. M. Hill, D.S.O., M.B., Ch.B.Glasg. (1906), R.A.M.C. Captain Hill was in practice at Battersea, London, before the outbreak of war.

Bar to Military Cross: Captain J. F. M. Sloan, M.C., R.A.M.C. Captain Sloan, whose home is in Ayr, held resident appointments in the Ayr County Hospital and District Asylum after his graduation in 1912.

Military Cross: Captain D. Mackie, M.B., Ch.B.Glasg. (1914), R.A.M.C.; Captain W. S. Martin, M.B., Ch.B.Glasg. (1914), R.A.M.C.; Captain W. L. Scott, M.B., Ch.B.Glasg. (1911), R.A.M.C.

GLASGOW GRADUATES IN THE CASUALTY LISTS.—We regret to find that during the past month more casualties to Glasgow graduates have been reported.

Captain S. H. Harris, wounded, graduated in 1910, and was in practice in Glasgow at the outbreak of war.

Captain John Ferguson is reported as missing since 30th November. He was practising in Alloa before the war.

Captain W. W. Morrison, wounded, received the degree of M.B., Ch.B. in 1916, and joined the Special Reserve immediately thereafter.

Captain J. H. Paul, M.B., Ch.B.Glasg. (1916), wounded, resided at Millport before joining the army.

DEATH OF DR. ELSIE INGLIS.—The announcement of the death of Dr. Elsie Inglis has occasioned general regret, and tributes to the great services carried out by this notable war-worker have poured into the press from all parts of this country and from most of the allied countries. A graduate of Edinburgh, Miss Inglis settled to practice in that town, and interested herself deeply in maternity work among the poor there. At the same time she became closely connected with the suffrage movement.

At the outbreak of war, however, she threw down her home duties and offered her services to the French Red Cross and to the Serbian Legation. The acceptance of this offer led to the foundation of the Scottish Women's Hospitals for Foreign Service. In December, 1914, the first unit—doctors, nurses, and orderlies—was established at Abbaye de Royaumont. There followed units to Serbia, Corsica, Greece, and Roumania. Early in 1915 Dr. Inglis, having consolidated her committee at home, proceeded herself to Serbia, where she worked with zeal and success till that country was overrun by the enemy and she and her devoted band were made prisoners of war. Released later, Dr. Inglis returned home to gather up her forces anew. In recognition of her services the Crown Prince of Serbia conferred on her the Order of the White Eagle, a unique distinction for a woman to receive. She proceeded to Roumania about fifteen months ago, where again she was just in time to share the perils of retreat and minister to the fallen. From the Dobrudja she eventually went to Russia, where again there was a vast field for medical aid. In the last four months her physical strength failed, but her wonderful spirit kept her going. She returned to this country on 28th November, and died two days later.

COLOUR-BLINDNESS.—We desire to call the attention of our readers to the paper by Mr. C. R. Gibson, which appears among the original articles of our present issue. The subject of colour-vision is one which is at any time of much interest to ophthalmologists, and is at the present time, when so many are occupied in testing the eyesight of recruits, of particular interest to large numbers of medical men. The theory of its origin presented by Mr. Gibson affords an explanation of many of its obscurer points, and brings it into line with the most recent views upon electro-physical and electro-chemical reactions.

SIR WILLIAM BABTIE.—Surgeon-General Sir William Babtie, V.C., K.C.M.G., who graduated M.B.Glasg. in 1880, was entertained at dinner, during a recent visit of inspection to the north, by the North of England Glasgow University Club, at Newcastle. Dr. J. Chalmers, of Sunderland, presided, and Sir Thomas Oliver, in proposing the toast of "The Guest of the Evening and Alma Mater," after paying a tribute to the University, said that a man's success was a result of personal efforts and opportunities offered and accepted, and not of training at any particular university. Surgeon-General Babtie, who had won the V.C. at Colenso on 15th December, 1899, had proved himself a worthy son of his Alma Mater. He had only last week returned from visiting the Italian front to superintend the organisation of the British medical service there.

Sir William Babtie, in response, said that in all parts of the world—Gallipoli, Egypt, Salonica, France, and Italy—he had met fellow-graduates who had added to the lustre of the University. On behalf of the Army Medical Service, he acknowledged the enormous work done by civil medical practitioners. Though successful medical administration was not entirely a matter of professional skill, such skill and knowledge must enter largely into the affairs of military medicine. The best results could only be obtained by a combination of professional skill of a high order with administrative capacity of the first class. The whole gamut of the life of the citizen came within the purview of the medical profession, and he hoped that in future it would take a larger share in public administrative work—in public health, in education, in housing, in dietetics, and in the recreations of the community.

The toast of "The Allied Forces" was given by Professor Wright Duff, and acknowledged by Lieutenant-Colonel Wells Patterson, and that of "The Chairman" by Lieutenant-Colonel Bolam, who elicited a felicitous response from Dr. Chalmers.

ACCOMMODATION IN CIVIL HOSPITALS.—The Minister of Pensions has appointed a Committee to carry out the important task of ascertaining the accommodation in civil hospitals of all kinds in Great Britain. The need of such a survey has long been held to be imperative by the public departments concerned with medical treatment, but the need has become urgent in consequence of the war. With the lengthening of the war the number of men who have to be discharged for wounds or injuries or other disablements which render them unfit for further military service increases, and although the military hospitals provide initial treatment for these cases many of them require medical and even surgical treatment after their discharge. It is the statutory duty of the Ministry of Pensions to provide for these cases, and it becomes necessary to see that the civilian resources of the country are adequate to deal with them, and so far as they are inadequate to consider in what way the deficiency can be made up. But the discharged man forms part of the civilian population at large, and the interests of his case cannot be considered apart from theirs. It would be obviously impracticable to attempt to provide for the discharged man in large centres away from his own home. The Minister has therefore recognised that the more limited investigation with which he is primarily concerned would more satisfactorily be conducted with reference to the larger problem of the adequacy of hospital accommodation for the whole population. With this view he has appointed Sir Arthur Newsholme, Chief Medical Officer to the Local Government Board, Dr. Smith Whitaker and Dr. Meredith Richard, deputy chairmen of the English and Welsh Insurance Commissions, together with a representative of the War Office, to serve on the Committee, and to afford the Committee full advantage of the information and records possessed by those departments. The Committee intend to report on the various aspects of the investigation at an early date.

ORTHOPÆDIC TREATMENT OF DISABLED MEN.—On 6th December the Minister of Pensions formally opened the Orthopædic Institute established at Glasgow, by agreement with the Joint Disablement Committee for the South-West of Scotland, including the counties of Lanark, Renfrew, Dumbarton, Argyll, Bute, Ayr, Stirling, Kinross, Wigtown, Kirkcudbright, and Dumfries. The centre is for the benefit of discharged sailors and soldiers who have ceased to be in-patients of military hospitals. The patients will be men recommended for treatment as out-patients, also men in training for a new occupation, or who may be engaged at their ordinary work; they will leave their training or occupation for the time required each day for treatment. The centre is equipped with radiant heat baths and electrical appliances. A similar centre was opened in Aberdeen a month ago, and another is being established at Dundee. The Ministry of Pensions has formally approved the arrangement between the Corporation of Edinburgh and the Joint Disablement Committee for South-East Scotland for the provision of an orthopædic centre at Tynecastle, Edinburgh, for the treatment of disabled soldiers and sailors. Tenders have been accepted for the erection of the building.

RADIUM AND CARCINOMA.—We have become so accustomed in recent years to the use of radium in the treatment of carcinoma that it is with very great interest we turn to a new development arising out of this. That radium has the potentiality of destroying healthy tissue as well as morbid structures has now long been recognised, but its power to produce such a definite condition as malignant disease has perhaps not received the attention from authorities that the importance of the question demands.

Dr. W. S. Lazarus-Barlow deserves much credit for the researches he has carried out in quest of information as to the cancer-producing effects of radium emanations. On 4th December he reported his progress in the work to the Pathological Section of the Royal Society of Medicine.

The experiments were conducted upon rats and rabbits. In the case of the rat minute tubes containing radium were introduced beneath the skin. These experiments were undertaken on the basis of the facts that exposure to *x*-rays caused squamous cell carcinoma of the hand, and that small quantities of radium had been demonstrated by him to be of frequent occurrence in carcinomatous tissue. In the case of the rabbit small gall-stones obtained from the human subject and proved to be devoid of radium by alpha ray electroscopic analysis were artificially impregnated with radium and introduced into the gall-bladders of the animals. These experiments were based on the fact that he had found a marked difference between the radium content of gall-stones in man according as they were associated with cancer of the gall-bladder or not, gall-stones associated with cancer of the gall-bladder containing relatively large quantities of radium, whereas gall-stones associated with cancer of other parts, or unassociated with cancer, contained mere traces of radium or none could be detected. The experiments were commenced in 1912 and were not yet complete. He had not succeeded in producing in the animals the clinical condition known in man as cancer, but in the skin of rats he was able to produce, by means of suitable doses, an irregular, considerable overgrowth of squamous epithelium which sent processes into the corium, was frequently supplied with well-marked cell nests, and was indistinguishable histologically from a very early squamous cell carcinoma in man. This condition could be produced at will, but if the action of the radium persisted the newly formed cells came under its destructive influence, and if the radium were removed the skin condition receded with some rapidity, leaving merely a thin scar tissue devoid of hair and hair follicles.

NEW MEDICAL RECRUITING BOARDS.—The new Medical Boards for examining recruits under the National Service scheme came into operation in Scotland on 15th November. The Deputy Commissioners appointed for Glasgow are Lieutenant-Colonel Moffet, M.B., a medical graduate of Aberdeen University and a member of the Army Medical Service, who is in charge of No. 1 Board; and Lieutenant-Colonel Julian Smith, M.B., C.M., a graduate of Edinburgh University, and a member of the Indian Medical Service, who is the Deputy Commissioner of No. 2 Board. A rota of civil practitioners, working under the Deputy Commissioners, are engaged in the examination of recruits.

TRAVELLING MEDICAL BOARDS: REVISION OF DUTIES.—According to an Army Council instruction issued by the War Office travelling medical boards as now constituted are to be forthwith abolished. In future the presidents will be selected from among the existing presidents or from temporary R.A.M.C. officers who are members of existing travelling medical boards, whilst the members of the board will be an officer of the R.A.M.C. selected by the D.D.M.S. of the command as a permanent member and in boards visiting large garrisons one C.O. of a unit (not under the rank of a field officer) which is not being examined. Those boards, which will ordinarily visit command depôts or districts having small detached garrisons, will have a permanent president and a permanent member both of the R.A.M.C. as selected by the D.D.M.S., and another permanent member who must be a combatant officer not below the rank of field officer who has commanded a battalion (or equivalent unit) during the war who will be appointed by the War Office.

The following officers will attend the sitting of a travelling medical board:—The C.O. or second in command of the unit being examined, the M.O. in charge of the unit being examined, the O.C. company (or corresponding unit) when soldiers of his own company are being examined. The instruction points out that in forming their opinion as to the fitness of men, travelling medical boards should not be too exclusively guided by the purely medical aspect of the case. The evidence of C.O.'s and of regimental medical officers should invariably be taken when offered.

CANCER RESEARCH WORK: MUNIFICENT GIFT TO EDINBURGH. —An Edinburgh gentleman who died recently has left a bequest which will amount to, if not exceed, a quarter of a million pounds, to be devoted to combating cancer. The sum will be available on the death of certain specified life-renters, and meantime the following trustees have been appointed in connection with the bequest:—Mr. Alexander Darling, Master of the Edinburgh Merchant Company; Mr. J. Avon Clyde, K.C., M.P., Dean of Faculty; and Sir George Paul, W.S., Deputy Keeper of the Signet. Power is vested in the trustees to take all necessary steps to carry out the intention of the bequest, which states specifically that it is "for the care and cure of cancer." It is too early to say what form the scheme will take, but the trustees are given such wide powers that it should open up a new era in dealing with the disease in the city, and go a considerable way to aid medical science in treating one of its greatest problems.

WAR AND THE BIRTH-RATE.—Sir Bernard Mallet, the Registrar-General, in his presidential address at the Royal Statistical Society, London, on 20th November, on the effect of the war on vital statistics, said that the war had resulted in England and Wales in 200,000 people being married between August, 1914, and June, 1917, who in the ordinary course would not have been married. For Hungary, the only belligerent country apart from the United Kingdom for which complete figures were available, the figure was 600,000. Dealing with the birth-rate, he said that the United Kingdom had suffered far less in this vitally important point than had Germany and Hungary. Up to the end of June, 1918, speaking approximately, the United Kingdom would have lost by the fall in births over 500,000 potential lives, 10,000 per million of the population: while Germany had lost about 2,600,000, approximately 40,000 per million; and Hungary 1,500,000, approximately 70,000 per million. At the outbreak of the war the population of the Central Empires was about two and a half times as great as that of the United Kingdom. Their losses of births had apparently been ten times as great.

Despite statements to the contrary, the war had produced no effect upon the figures of illegitimate births. The rate of infantile mortality in the United Kingdom in 1916 was the lowest on record, namely, 91.

THE VOLUNTARY RATIONS.—Lord Rhondda has issued a scale of dietary with which persistent advertisement has made everyone familiar. It is obvious to those who know even a little of dietetics that very great labour and thought must have been expended before the scale in its finished form could be presented to the public. Calculations have been based, of course, on the calorific values of the different foodstuffs, heat being the form of energy which can be most easily measured in the laboratory. But all results gained thereby had to be placed alongside the list of supplies of foodstuffs, and the latter quantities constitute for the present the factors of supreme importance.

It will scarcely be disputed that the expression of bodily needs in terms of calories has very serious defects, as the physiological factors do not enter into the calculation. At most it can be intended to apply only to the average individual with average digestive powers, and it may be pertinently asked what this standard is, and how it has been obtained.

The method of estimation leaves out of account the very large number with abnormal gastro-intestinal functions. In other words, any scale of foodstuffs is likely to contain a fair quantity of materials which given individuals cannot consume with tissue benefit.

The recent wheat regulations may be taken as an example of the difficulties a food-controller has to encounter. It is enacted that bread of the pre-war type can be obtained only under medical certification that the patient is suffering from acute gastric or intestinal condition. Chronic disease is not sufficient. Yet we all know that bread does not usually form part of the diet in acute diseases of stomach or intestine.

Such considerations apart, however, the present juncture gives a great opportunity, and one which doubtless will be seized by medical statisticians, to observe and note the effects of food restrictions on the incidence of gastro-intestinal and other diseases.

NOBEL PEACE PRIZE FOR THE RED CROSS.—The Nobel Peace Prize for 1917 has been awarded by the Nobel Committee of the Norwegian Storthing to the International Red Cross Committee of Geneva. It was unanimously decided to add the Peace Prize for 1916, which was last year reserved, to the special fund of the Committee.

RED CROSS SOCIETY: SCOTTISH BRANCH.—The advent of winter has terminated the opportunities for holding those pleasant and very profitable, in a financial sense, outdoor functions. The energies of the Branch and its helpers have, however, not been less, indeed they would seem to have been redoubled in the direction of money-raising. The heavy fighting of the autumn, with the inevitable great increase in the numbers of casualties, has thrown a very great strain on the resources of the Society, yet every contingency has been successfully dealt with. The prospect of continuous battling throughout the winter, in place of the "rest" experienced by our splendid troops in previous winters, would make the outlook for the Red Cross Society a serious one, were it not for the firm hold which this deserving object has taken upon the feelings of the philanthropic public.

The Headquarters Organising Clothing Committee continue to make their appeals every few days as soon as wants appear probable. At times during the autumn their stores were depleted of certain articles, such as operation stockings, gloves, and cardigan jackets, owing to the heavy demands created by the offensive in France, but it would seem that it is only necessary to point out these wants for a generous public to make good the deficiencies.

The Hospital Supply Depôts are so untiring in their efforts that their supplies of dressings and bandages seem inexhaustible. For instance, in October the Burnbank depôt sent out no less than 79,060 dressings and bandages, while that at Pollokshields despatched 46,069 of these articles. Such figures speak for themselves.

The credit side is very encouraging. The Flower Show in Glasgow was the means of sending £283, 13s. 9d. to the coffers of the Branch.

The Scotstounhill Red Cross Work Party raised £117 by a sale of work in December. This party has up till now contributed £640, besides sending in 6,240 garments. This may be taken as an example of the results obtained by small gatherings of devoted ladies all over Scotland.

On 14th December it was announced that during Scotland's Red Cross Week Glasgow contributed £13,851, 13s. 11d., and the rest of Scotland £177,537, 2s., giving a grand total of £191,388, 15s. 11d.

An auction sale organised by the staff of Messrs. Craig, Gordon Street, in December, realised a sum of over £230.

The Scottish Filling Factory at Georgetown held a concert in St. Andrew's Hall on 22nd December, the proceeds of which go to the Branch funds. The results are not yet to hand, but it may confidently be assumed that a substantial sum will be realised.

Speaking at a Glasgow Rotary Club luncheon in December, Sir George T. Beatson gave some details of the work of the Red Cross Society. He explained that the Naval and Military Medical Service had to rely, in time of war, upon civilian aid, hence the work of the Red Cross. The Scottish Branch managed its own funds, and took care that no wounded soldier was ever sent to Glasgow without finding a bed ready for him. The activities of the Red Cross fell into four sections—transport, auxiliary hospitals, garments, and surgical dressings. Transport had been brought to great perfection, the Scottish Branch owning 252 ambulances, which had assisted on every front. They possessed 160 auxiliary hospitals, providing 5,000 to 6,000 beds. They had supplied 1,792,541 garments for hospitals and 1,858,460 surgical dressings. Besides running railway rest stations they had, with the help of school children, collected over 2,000,000 eggs for the hospitals. They also cared for discharged and disabled soldiers, especially cases of shell-shock, epilepsy, and tubercular trouble. The public had been very generous to the Red Cross, the coalmasters and miners alone having contributed a sum of £68,000, but it was all needed, and was being used for a great and merciful object.

The speech of the Pensions Minister in Glasgow was followed by some criticism of the new department opened at St. George's Place. There seems to have been some misunderstanding of the functions of this department, but, fortunately, a very clear explanation was put forward by the Scottish Red Cross Society, and there is now no further room for criticism. Although it is so very well equipped for orthopædic work, the department at St. George's Place is properly an annexe, and its purpose is not to provide treatment for men who are still invalids, but is limited to the ancillary treatment which can be undergone by men whilst engaged in receiving occupational re-education.

ROYAL INFIRMARY DORCAS SOCIETY.—The report presented to the meeting of the Royal Infirmary Dorcas Society, which was held in the Merchants' House, on 13th December, stated that during the year 631 patients were supplied with 1,505 articles of new underclothing, boots, flannels, &c., besides cast-off outer garments. The committee pointed out that owing to high wages and plenty of work there were fewer cases requiring clothing, but that the increased cost of material made the expense incurred by the Society greater than usual. The report added that the committee had in view a reorganisation and development of what might be called the social side of their work so as to bring the Dorcas Society into line with the changed times and into closer co-operation with other agencies. The Society already gave aid to families when the wage-earner was laid aside, but the funds at their disposal only allowed of this being done to a limited extent, and there were other ways in which they could help both the patients and the Infirmary had they the use of a little more money.

Mr. T. W. M. Watson, treasurer, reported that the total expenditure was £554, leaving a deficit on the year's working of over £103, an increase of £70 over the deficit in the preceding year.

Mr. William George Black, LL.D., who presided at the meeting, expressed the hope that when the Glasgow public got to know that there was such a large deficit they would not only liquidate the debt, but would respond so generously to the appeal for support as to enable the Society to carry out the extension which they had in contemplation of their beneficent work.

The report was adopted.

Western Infirmary: Annual Meeting.—The annual meeting of qualified contributors to the Western Infirmary was held in the Merchants' Hall, Glasgow, on 29th November, the Lord Provost (Mr. J. W. Stewart) presiding.

In the course of a brief review of the annual report the Lord Provost said the outstanding feature was that the ordinary expenditure during the past year had exceeded the ordinary income by £22,174. That must be regarded as a serious state of affairs and a cause of great anxiety to the managers. Fortunately, that anxiety had been relieved by the sums received as donations and legacies, which had enabled them to wipe out the deficiency. It was, however, desirable that an endeavour should be made not to curtail expenditure, which was difficult in these times, but to make the annual income meet the annual expenditure, and that could only be accomplished by increasing the income. It was gratifying that there had been an increase in the ordinary subscriptions and in the contributions from churches, Sabbath schools, and from employees. It was also encouraging to think that a larger number of citizens were recognising their duty to such an institution, and he hoped there would be a still broader and more sympathetic spirit revealed. The value of the work done in the Western Infirmary was reflected in the fact that, notwithstanding the movement of population and the difficulties of staffing the hospitals, there had been treated during the past year 9,057 indoor patients and 23,877 outdoor patients, and that the treatment was successful was shown by the fact that, eliminating the hopeless cases which proved fatal within forty-eight hours of admission, the death-rate was the extremely moderate one of 5·2 per cent. He moved the adoption of the report.

Sir Matthew Arthur, Bart., who seconded, pointed out by way of indicating the strain on the resources of the Infirmary that the daily number of indoor patients during the year had been 547, as against 540 in the previous year, while the expenditure had increased by £4,300, or 8 per cent. Considering the increased cost of commodities, and that the patients and staff in residence averaged 891, he thought it was matter for gratification that the increased expenditure was not larger. The managers began the new year with great anxiety, for prices would no doubt increase, but they trusted that while the Western Infirmary continued its beneficent work and was carefully administered it would receive generous support from the community.

The report was adopted.

WESTERN INFIRMARY: ANNUAL MEETING OF SAMARITAN SOCIETY.—The Right Rev. Professor Cooper presided at the annual meeting of the Samaritan Society connected with the Western Infirmary, held in the Lecture Hall of the Infirmary, on 13th December.

Mrs. Grant, honorary secretary, submitted the annual report, in which it was stated that the work of the Society had been carried on without interruption throughout the year. While the old lines had been faithfully followed, assistance had also been given to new interests. A gift of £15 was handed to the matron to be used for the comfort and happiness of invalid soldiers. It was used principally for defraying travelling and other expenses of wives or daughters or other near female relatives of soldiers in the Infirmary who were at a distance from home. Sums of money had been given to 138 persons to help to pay rent or for other purposes, and women who were unable to support themselves otherwise were given sewing to do for the Society. The treasurer had received notice that a legacy of £1,000 had been bequeathed to the Society by the late Miss Mary Hamilton.

The Chairman, in moving the adoption of the report, said it showed that the Society was eminently worthy of its name. Its work, which was of great assistance to the Infirmary, was highly valued by Colonel Mackintosh and his staff, while it gave unalloyed joy to the recipients.

Mr. James S. Craig seconded, and the report was adopted.

Mr. Norman Sloan submitted the financial statement, which was also adopted.

Colonel Mackintosh, in moving a vote of thanks to visitors of the Society, said that during the past twenty-five years he had had many opportunities of observing the work of the Society, and he could testify to the benefits the patients received through the efforts of its members.

GLASGOW VICTORIA INFIRMARY: ANNUAL MEETING.—The annual meeting of qualified contributors to the Victoria Infirmary was held on 6th December, Sir William Bilsland, Bart., presiding.

Mr. William Gray, hon. secretary, submitted the thirtieth annual report of the governors. During the past year the Infirmary had, he said, been fully occupied. There had been treated as in-patients 3,514, and as out-patients 6,445. There had been on an average 200 cases waiting for admission. A short time ago they received an application from the War Office to reserve a certain number of beds for wounded soldiers, and with a little reorganisation the superintendent was able to reserve 50 beds, 30 of which were now occupied. They would probably be asked to take in 20 more soldier patients. Mr. Gray concluded with a reference to the loss the Governors had sustained in the death of Mr. John Fleming, one of their number. Mr. Fleming was one of the original governors when the infirmary was started thirty years ago, and had devoted a very great deal of time and thought to the work of the institution.

The financial statement was submitted by the hon. treasurer, Mr. D. M'Kechnie, who described it as very gratifying. They had added a large sum to their capital fund through the kindness and generosity of the trustees of the late Miss Schaw. The ordinary subscribers had largely increased, as had also the subscriptions from workers and employees.

In moving the adoption of the reports, the Chairman also made allusion to the death of Mr. John Fleming, than whom, he said, the Victoria Infirmary never had a better friend. The secretary would be instructed to send an expression of their deep sympathy with the relatives. The governors, he proceeded, had to be congratulated on another excellent year of most useful work. There were many pleasing features in the report. He was glad to know that on the financial side they had been extremely fortunate during the past year, but they could not always count on extraordinary income, and they must continue to give attention to the ordinary subscriptions. It was interesting to learn of the development of the research department; it was along the line of research, both as regarded medical and surgical science, that we could look for a lessening of the multitude of ills that flesh is heir to. They hoped for great things from the research work that was being carried on under the auspices of the Victoria Infirmary.

Mr. James Macfarlane, chairman of the Royal Infirmary, who seconded, said that since the outbreak of war he felt satisfied a deeper interest had been taken by the people of Glasgow in the affairs of our large institutions such as the three infirmaries, and that a higher estimate was being formed amongst the community of their value and importance.

The reports were unanimously adopted.

VICTORIA INFIRMARY DORCAS SOCIETY.—The twenty-first annual meeting of the Victoria Infirmary of Glasgow Dorcas Society was held in the Board Room, Carlton Place, Glasgow, on 13th December. Mr. Henry E. Gordon of Aikenhead occupied the chair.

The report of the General Committee which was submitted showed that last year 535 patients received clothing or other help before leaving the infirmary and 1,064 garments were given away. Grants for the payment of rent to the amount of £15, 2s. 9d. were given during the year. It was stated that owing to the impossibility of procuring raisins the War Committee had been obliged to discontinue sending packets of dried fruit to the men at the front. During the three years in which the scheme had been in operation 1,568 cases containing 183,360 packets had been despatched to France and the East. The accounts of the War Committee show that for last year the amount raised was £530, 12s. 3d., and the total sum contributed in the three years was £1,914.

The Chairman moved the adoption of the report. Regarding the work of the War Committee and the proposal to discontinue sending packets of dried fruit to soldiers, he thought cigarettes might be sent instead, and there were other things that would be quite as much appreciated.

Mr. William Beattie seconded, and the report was adopted.

GLASGOW MEDICAL MISSIONARY SOCIETY.—At the fiftieth annual meeting of the Glasgow Medical Missionary Society, in the hall of the Royal Faculty of Physicians and Surgeons, on 12th December, Sir Donald MacAlister, who was in the chair, said that of the founders of the Society fifty years ago only one, Dr. J. D. Maclaren, survived. The Rev. Dr. Watson emphasised the importance of housing. The report of the medical superintendent of Moncur Street Dispensary stated that many of the ailments for which treatment was sought were chronic affections due to, or aggravated by, the unsatisfactory surroundings in which the people lived. More money was now in the hands of a good many of the working classes, and there was less evidence of dire poverty, but children were suffering more than usual, especially among the soldiers' families, on account of the mother going out to work.

HIGGINBOTHAM SICK NURSING ASSOCIATION.—The annual meeting of the Higginbotham Sick Poor Nursing Association was held on 26th November in the Home, 218 Bath Street, Glasgow. Mr. Hugh Reid, Dean of Guild, presided.

The annual report of the Association stated that the organisation was formed in 1875 by the late Mrs. Mary Orrell Higginbotham to nurse the sick poor of Glasgow gratuitously. The number of cases treated during the year amounted to 2,369, and the total number of visits paid was 64,754. The financial statement showed a deficiency of £308. Since the war broke out 20 of the nursing staff had left to take up war work. Reference was made in the report to the death of Mr. David Simpson Carson, C.A., who for nearly twenty-five years had rendered valuable service as secretary of the Association. The Ladies' Auxiliary Association reported that £412 was collected by its lady collectors, and that 496 garments were distributed and 883 nursing appliances were lent for the comfort of patients.

The chairman proposed the adoption of the report. He said that one of the results of the war was the improved status of the nursing profession—everyone recognised the valuable work done by nurses, especially for the troops. That work was rendered possible by the existence of such institutions, which had laid the foundation of a supply of efficient nurses. He referred to the large total of cases attended, and said he was sure the supporters of the institution when they knew there was a deficit would see that it was made up. The nurses in their work acted under the direction of skilled medical and surgical gentlemen, to whom the Association was deeply indebted.

Mr. Charles Ker, C.A., seconded, and the report was approved.

SCOTTISH NURSES' ASSOCIATION.—Mrs. Strong, president, occupied the chair at the annual meeting of the Scottish Nurses' Association, held on 19th December, in the Masonic Halls, 100 West Regent Street, Glasgow, at which there was a good attendance of members. Those on the platform included the Marchioness of Ailsa, the Hon. Albinia Brodrick, Miss J. Paterson, N.U.T.N., and Dr. M'Gregor-Robertson, vice-president.

The ninth annual report, which was submitted by Dr. M'Gregor-Robertson, showed that new members had joined the Association to the extent of 100. The treasurer's report showed a balance in hand of £60, 18s. 3d.

The annual reports were adopted. Mrs. Strong was re-elected president. Other office-bearers were also re-elected, and Miss Gemmell, Kirkcaldy, and Miss Finn and Miss Cowie, Paisley, were added to the committee.

Mrs. Strong said the increase of interest in the Association was something marvellous. The great feature of the year had been the opening of the club rooms, which were first thought of merely for the members of the Scottish Nurses' Association, but which had been thrown open to all nurses, trained or in training. The effect had been wonderful. So much had the work prospered that they were trying to awaken public interest in the matter, so that they might get some outside help to do very much more for nurses.

THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH, AND A MINISTRY OF HEALTH.—We have received the following statement by the Royal College of Physicians of Edinburgh regarding the proposal to institute a Ministry of Health:—

"The Royal College of Physicians of Edinburgh was erected by Royal Charter granted by His Majesty King Charles the Second, 29th November, 1681, and incorporated anew by Royal Charter granted by Her Majesty Queen Victoria, 16th August, 1861.

"The Royal College has been, and continues to be, largely concerned with matters affecting the Health of the nation. It has taken considerable part in developing medical science and practice. It is therefore particularly interested in all proposals which have for their aim the erection of a State Department of Health.

"The Fellows of the College have given careful consideration to the subject. The statement which follows is the outcome of deliberations, which had regard to the great questions of Health and the urgent need of their recognition and effective handling by the State. The standpoint of the College is frankly medical, not political or departmental.

"The administration of Health measures has in the past been developed in connection with a number of Government Departments, such as the Local Government Board, Home Office, Board of Education, Insurance Commission.

"Each of the several Departments has worked within the limits of certain Acts of the Legislature dealing with definite subjects and conferring definite powers.

"The Health of the Community has received benefit from the work of the Departments; but the operations of the Departments have not attained that comprehensive measure of success which the extent and gravity of the Health problem demand.

"As regards Health questions, the sphere of the several Departments is limited, and, with increasing legislation, the overlapping which inevitably follows from their separation becomes steadily aggravated.

"A fundamental weakness lies in the fact that in none of the Departments concerned is the control vested in a Minister appointed primarily to deal with Health problems.

"From this division of interest and responsibility departmental difficulties are apt to arise; policy in regard to matters pertaining to Health tends to become subject to considerations of departmental jurisdiction; and the essential interest of Health questions is liable to be obscured.

"Under the restrictions of the present system it has been impossible to evolve concerted means for dealing with the complex and ever widening problems of National Health. Not until these restrictions are removed will it be possible to attain effective and adequate machinery.

"What is required is the creation of a Ministry which shall concern itself with Health matters pure and simple, and to whose jurisdiction shall be transferred from other Departments the operations of all existing enactments in so far as they deal with Health.

"This opens up another aspect of the question, namely, the immense extent of the issues involved.

"Existing Acts deal only with sections and fragments of the subject. A multitude of conditions affecting Health are not included in the purview of the Acts, and have hitherto been left untouched.

"The Minister of Health must handle the whole problem. He must be concerned not only with questions already dealt with by the Legislature, such as Infectious Diseases, Infant Welfare, &c., but also with fresh questions arising from time to time, *e.g.*, conditions causing or affecting forms of sickness and disease not yet included within the operation of Health Acts.

"Such matters are frequently brought to light in the work of the medical profession. Beyond the treatment of individual cases by medical practitioners there are large questions concerning conditions to which sickness is due. These are certainly matters for a Ministry of Health.

"To enable the Ministry to carry out its wide and highly complex functions, a Board of Health should be constituted, and its members selected in such a way as to ensure that the attention of the Ministry of Health would be directed to all matters affecting Health.

"The Royal College of Physicians of Edinburgh is, therefore, of opinion that it is essential, in the public interest, that a Government Department should be erected to deal exclusively with Health.

"The Royal College suggests:—

"I. That the Department should consist of the Minister and a Board of Health, of which the Minister should be Chairman and whose Members should be elected on the ground of experience and interest in matters pertaining to Health.

"II. That the Purposes of the Department should be—(1) To administer the Health Acts. (2) To devise executive measures for dealing with Health problems not hitherto defined by legislative measures. (3) To institute inquiries with a view to introduce measures for improving conditions affecting Health. (4) To develop facilities for investigation of problems in Health and Disease as they may arise.

"III. That the Board should include three Groups of Members —(1) Administrative officials. (2) Laymen with wide experience of Health problems, or in the administration of hospitals and other health agencies, official or voluntary. (3) Medical members who have had experience in—(*a*) Public Health Service; (*b*) General Practice; (*c*) Special Clinical Departments, including Industrial Medicine; (*d*) Medical Research; (*e*) Medical Statistics.—In name and by Authority of the College,

"WILLIAM RUSSELL, M.D., *President.*
"A. DINGWALL-FORDYCE, M.D., *Secretary.*

"EDINBURGH, 6*th December*, 1917."

REVIEWS.

Electro-Therapy in Gynæcology. By SAMUEL SLOAN, M.D., F.R.F.P.S.G. London: William Heinemann. 1917. (12s. 6d. net.)

DR. SLOAN is to be congratulated on his book, to the production of which he has evidently given much time and labour, with the result that we find in it a succinct account of his experience of electro-therapy as applied to gynæcology, and of the conclusions to which that experience has led him.

The earlier portion of the work deals at considerable length with the subject of electro-physics; and while for experts in electrical matters this section may be superfluous, it is likely to be of much value to those who are beginning this line of treatment. It is followed by a description of the apparatus required in treating the various morbid conditions referred to in the latter half of the volume, and by a discussion of the principles of electro-therapeutics. Next comes a section devoted to those functional disorders of the cerebro-spinal nervous system, and of the abdomen, to which women are specially liable, and to their treatment by electro-therapy. The most important part of the work is given to the special consideration of pelvic disorders.

While we cannot agree with all the claims Dr. Sloan puts forward for his electrical methods of treatment, this record of what he has done in this branch of medication, of which he has a very large experience, is nevertheless of much interest. Roentgen-ray treatment is not dealt with, the author stating that his experience at present with x-rays is not sufficient to warrant his expressing an opinion for or against.

We notice that the paragraph on the treatment of cystitis concludes with this sentence:—"I assume that none of the cases which I have treated was due to tubercle since the treatment was successful with them all." In view of the generally unfavourable results of the treatment of tuberculous cystitis, the assumption is no doubt correct, but it is surely better practice in all cases of cystitis first to ascertain the cause of the conditions, and then to institute appropriate treatment.

The appendix of about 120 pages consists of clinical notes on the many conditions the author has treated electrotherapeutically, and of a brief analysis of the results in each class of case. Dr. Sloan honestly gives his failures with his successes, and the reader is thus enabled to form an independent judgment. He will find in the whole volume material of much value in helping him to select cases to which this method of therapeutics is applicable.

Midwifery. By TEN TEACHERS. Under the Direction of COMYNS BERKELEY, M.A., M.D., M.C.Cantab., F.R.C.P.Lond. Edited by COMYNS BERKELEY, H. RUSSELL ANDREWS, J. S. FAIRBAIRN. London: Edward Arnold. 1917. (18s. net.)

THIS book has been written by ten of the London teachers, three of whom have acted as editors. Books produced in this way generally vary as to the value of different chapters, and this one is no exception to the rule. Broadly speaking, the theoretical parts are better than the practical. The first third is devoted to the physiology and pathology of pregnancy, and on the whole it is extremely well written. The toxæmias of pregnancy are discussed in a broad and comprehensive manner, but we distinctly object to the statement that if a patient has had one eclamptic fit the uterus is to be emptied. To advise a student that in such a case he is to do Cæsarean section, or to dilate the cervix with metal dilators until he can insert a de Ribes' bag we consider to be wrong. It is news to us that the balance of opinion is in favour of this line of treatment. It may be in London, but it certainly is not in Scotland. The statistics they quote do not bear this out.

Peripheral neuritis is not dealt with. It is not a common disease, but when it does occur in a bad form, it is one of the most terrible complications one can meet with.

In dealing with heart disease, no mention is made of paralysis of the heart from over-distension of the right side shortly after delivery, which sometimes occurs in cases of mitral stenosis. Berry Hart drew attention to this a good many years ago.

Labour, its mechanism and management, is well dealt with, but there are some methods of treatment to which we distinctly object, *e.g.*, in delivering an after-coming head the student is advised to keep the head from becoming extended by placing his finger in the child's mouth. In one sentence he is told not to make traction on the jaw, and in the next he is told "the finger in the jaw draws the face downwards." How this can be done without making traction on the jaw passes our comprehension.

In dealing with face cases, the student is advised to attempt to push the forehead up by means of three fingers in the vagina, and to push the occiput downwards into the brim with the other hand on the abdomen. The diagram showing this is labelled, "Method of attempting the conversion of a face into a vertex presentation." It strikes one forcibly that a student would not likely put much faith in a method which the authors call an attempt, and he would be quite right. There is a much simpler and more effectual method, but it has not been described.

The chapter on ante-partum hæmorrhages is extremely well done, but there is one statement to which we object, viz., "Patients afflicted with both eclampsia and unavoidable hæmorrhage should be delivered by Cæsarean section." Why?

There is much in the book which is most praiseworthy, and it is extremely well illustrated. The authors state that "this book is frankly written for students preparing for their final examination," and no doubt it will serve this purpose admirably for students of the London schools.

Physiology for Nurses. By W. B. DRUMMOND, M.B., C.M., F.R.C.P.Ed. London: Edward Arnold. 1916. (2s. 6d. net.)

THE aim of Mr. Drummond's little volume is to supply nurses with a general conception of the subject of physiology, partly because he considers that it is as much as they have time for during their training, and partly because "the best way to study a large new subject . . . is to begin by furnishing the mind with elementary facts and ideas which will enable the new knowledge to be retained and assimilated." The second reason seems rather to discount the first. If nurses must go on beyond the scope of this book—and in many points they must if they are to have a rational basis for their work—then it is clear that they must at some point of their training find the time which Mr. Drummond says they have not got, and they may not unnaturally grudge spending some part of it on the preliminary study of his work. But to a nurse with no previous conception of bodily function the time so spent would not be wasted. It would give her clear ideas, accurately stated so far as they go, and if she held them clearly in her mind, she could more readily build upon them the necessary superstructure. For nurses at the outset of their training such a book as this may be cordially commended as a first step, if they understand that there are many steps to follow.

Nervous Disorders of Men. By BERNARD HOLLANDER, M.D. London: Kegan Paul, Trench, Trübner & Co., Limited. 1916. (3s. 6d. net.)

Nervous Disorders of Women. By BERNARD HOLLANDER, M.D. London: Kegan Paul, Trench, Trübner & Co., Limited. 1916. (3s. 6d. net.)

Abnormal Children. By BERNARD HOLLANDER, M.D. London: Kegan Paul, Trench, Trübner & Co., Limited. 1916. (3s. 6d. net.)

OF these volumes, semi-popular in their scope—for the author states that they are intended not only for the profession but also for those who have the care of nerve patients, and for other lay readers desirous of practical and useful information on the subject—the first two are concerned with those nervous diseases of men and women in which the mental factor plays a large part, and which are to a greater or less extent amenable to treatment by suggestion, psychotherapy, and other measures directed to the reversal of faulty mental habits. The third devotes itself to the nervous defects of children, to the various degrees of mental and moral deficiency in childhood and adolescence, to precocity and supernormality, and to the principles of a proper physiological and psychological education. The distinguishing feature of the three bocks is their insistence upon the psychological conception—Dr. Hollander calls it "the modern psychological conception"—of the various maladies described, and the attention devoted to psychological methods of healing as distinct from medicinal treatment or a passive attitude of *laisser aller.* Apart from the question how far it is desirable to treat the nervous disorders of men and those of women in separate volumes, a course which must lead to much unnecessary repetition, and also, in the lay mind, to an undue sharpness of differentiation where points of similarity should rather be sought for, it is doubtful whether the attempt to write at once for scientific and untrained minds is likely ever to be wholly successful. But in so far as the volumes are intended to explain to the laity how much of nervous illness has a non-physical origin, and to how great an extent such patients can be helped by the formation of right habits and by the judicious use of psychotherapeutic methods in the hands of qualified persons, they serve a useful purpose. The danger of all such books is that those who read them may think they know enough to set up as amateur psychotherapists.

Nerve Injuries and their Treatment. By PURVES STEWART, M.D., F.R.C.P., and ARTHUR EVANS, M.D., F.R.C.S. Oxford Medical Publications. London: Henry Frowde and Hodder & Stoughton. 1916. (8s. 6d. net.)

NERVE injuries are, if we may say so, peculiarly a feature of military surgery, and the appearance of the present volume is therefore highly opportune.

There is neither a preface nor an introduction, and the authors get to work without loss of time. This augurs well for the character of the book, and we are not disappointed as we read it. Every chapter, every page, bears the impress of the writer's determination to get to bedrock at once and avoid dalliance by the way.

The opening chapter deals with the structure and functions of nerves, and the changes which take place after division. The methods of examination are described, followed by chapters on the methods of production of injuries of nerves, and on symptoms. Conditions simulating a peripheral nerve injury are considered in a separate chapter; this again is succeeded by chapters on prognosis and treatment of nerve-injuries. Separate chapters are devoted to individual nerves—cranial, brachial, and crural. These are taken up systematically, and the statements in the text are supported by clinical histories. The different chapters are freely illustrated, there being 97 figures in 190 pages of text. Most of the illustrations are from photographs of cases. The volume closes with an excellent index.

Although such is not stated, the work bears evidence of being largely the outcome of the authors' observations in military hospitals. The matter is clear and detailed, and there is an utter absence of padding. The volume should be in the hands of all officers of the medical services. By them as well as by their civilian brethren it will be found valuable to read, and equally valuable as a work of reference.

We desire to express our thanks to the authors for this admirable and unpretentious treatise, and at the same time to congratulate the publishers on the form in which they have sent it out.

The Influence of Joy. By Professor G. VAN NESS DEARBORN. Mind and Health Series. London: William Heinemann. 1916. (5s. net.)

THIS volume, one of the "Mind and Health Series," is by the instructor in psychology and education at Sargent Normal School, Cambridge, U.S.A., one who is himself both a psychologist and a physiologist, and who has made a special study of the influence of emotion upon bodily and mental health, and particularly of the influence of euphoric emotion upon creative efficiency. He is well qualified, therefore, to speak upon his subject, and it is one which in these days of death is too apt to be forgotten or neglected. Joy, he seeks to show, is not only one of the most potent stimulants in the physician's armamentarium, it is a real food both to bodily and mental processes, not only temporarily quickening their activity, but also supporting it and making it more enduring. He discusses in the first part of his book its influence on nutrition, on the circulation, and on the nervous and reproductive systems: and in the second he applies the results he has demonstrated in enforcing the necessity of joy, and its essential place in all well-ordered work and life. If he is apt to be a little dithyrambic, the style consorts with the nature of his subject; and if at this time his enthusiasm should seem too facile to us who have walked in hell almost long enough to forget the blue, the more is he to be thanked for the courageous reminder that it is still above us.

Pulmonary Tuberculosis in General Practice. By HALLIDAY G. SUTHERLAND, M.D.Edin. London: Cassell & Co., Limited. 1916. (10s. 6d. net.)

THIS is a conveniently sized manual of 290 pages with good illustrations and clear type, also the use of thick type for headings facilitates reference. All aspects of the disease are considered and a good deal of space given to methods of physical diagnosis. Perhaps undue importance is attached to deviations from the normal in the examination of the chest when compared with the somewhat scant attention paid to symptoms. The author takes the view that "soil" is really the result of the pathological action of the "seed." "The seed creates the soil." The manual will be found very useful for anyone studying this most important subject.

I.K. Therapy in Pulmonary Tuberculosis. By WILLIAM BARR, M.D., D.Sc.Glasg., D.P.H. Bristol: John Wright & Sons, Limited. (3s. 6d. net.)

THIS is a small book of 82 pages giving the author's results with Dr. Carl Spengler's "immune substances," commonly called

I.K. "Tuberculosis immune substances," according to Spengler, are manufactured and stored in the erythrocytes. Rabbits with living bacteria injected intramuscularly develop a high degree of bacteriolytic antitoxic immunity against tubercle bacilli and the bacteria frequently associated with them, and which are said to be responsible for secondary infection.

This blood is collected aseptically, acidified with lactic acid, and the bactericidal and antitoxic qualities adjusted; this constitutes the product I.K.

One c.c. of I.K. Original contains 1,000,000 lytic-antitoxic units. The lysins destroy the bacteria, causing tuberculosis, and the toxins liberated become neutralised by the antitoxins. A passive immunity is thus obtained, and the cells of the patient are protected from poisoning by bacterial toxins. They are thus able, in response to auto-inoculation of the neutralised toxins, to generate further immune substances, and thus an active immunity is obtained without any toxic effect. There is also the possibility of a further active immunity being generated by the lysinised bacteria and tubercle bacilli acting as vaccines. Thus I.K. itself contains no active immunising agents, but these are formed autogenously. It primarily produces passive immunity and secondarily active immunity.

Dilutions are made up as with tuberculin, and are given hypodermically or by the mouth.

The reaction appears to be very similar to that produced by tuberculin.

The author describes the type of case likely to benefit, such as (1) early febrile cases without great remissions; (2) more advanced febrile cases; (3) hectic cases—these naturally require careful treatment; (4) bronchitic cases; (5) cases with inverted temperature.

I.K. can thus be given to cases where tuberculin would be contra-indicated. The results of treatment in a series of cases by the author are given, together with their temperature charts and all details enabling the practitioner to judge the suitability of the remedy and the requisite dose in each individual case.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

SURGERY.

Section of the Duodenum. By P. Escudero and R. E. Pasman (*Surgery, Gynecology, and Obstetrics*, November, 1917).—The authors know of reference to only one case similar to theirs, viz., that cited by H. Meunier, and quoted by Moynihan.

The case presently under review was that of a man, aged 60 years. The illness was of one year's duration, with periods of complete relief. The important symptom was pain coming on immediately after meals. It was usually referred to the epigastrium, but occasionally radiated to the left costal margin and to the dorso-lumbar region. The pain moderated on pressure, though sometimes it was so severe as to provoke vomiting, which gave immediate relief. There was neither hæmatemesis nor melæna. Wassermann reaction was positive.

Radioscopic examination suggested dilatation of the first portion of the duodenum with periduodenitis. The syphilis was treated by intravenous injections of mercury, and the patient improved so much that he refused operation, and left hospital six weeks after admission.

For three months he was free of pain, and then began to suffer from twenty-minute attacks, coming on one hour after food. He returned to hospital in very bad condition. At the operation, which was now consented to, very widespread adhesions were found to involve stomach, duodenum, liver, and gall-bladder. It was thought well not to disturb these, and a posterior gastro-enterostomy was performed. Patient died eleven days afterwards, and a *post-mortem* examination was obtained. A cavity about the size of a small tamarind was found in the centre of the mass of adhesions, and into this the two ends of the duodenum opened. Section of the duodenum was complete. The sero-muscular borders were smooth, but the mucous membrane herniated and was plaited, thus making the cavity appear smaller than it was. No food remnants were observed in the cavity.—CHARLES BENNETT.

Some Causes of Occasional Failure in the Operative Treatment of Chronic Gastric and Duodenal Ulcers. By George Woolsey

(*Surgery, Gynecology, and Obstetrics*, November, 1917).—The author describes occasional causes of failure under five headings.

1. *Improper technique.*—When gastro-enterostomy is performed it is important that absorbable suture material should be used. Unabsorbed silk or linen may keep up irritation and lead to ulcer at the gastro-jejunal junction. Excision of ulcers without gastro-jejunostomy does not cure the patient. In a small percentage of cases duodenal ulcer fails to heal after gastro-jejunostomy, especially if there is no pyloric obstruction. Theoretically, pyloric exclusion is indicated. The author follows Wilms' method and uses a strip of fascia from the rectus sheath. Occlusion need not be permanent.

2. *Improper selection of cases.*—Neurasthenic patients are to be avoided for surgical treatment. In these there may be all the symptoms, but no ulcer discoverable. Unless an ulcer is seen or felt, the use of gastro-jejunostomy is unwise, leads to disappointment, and discredits the surgical treatment of ulcer.

3. *Failure to remove other causes of gastric symptoms.*—While an ulcer may be found and dealt with, there may also be present extra-gastric conditions, such as gall-bladder disease or chronic appendicitis. These, if left alone, will maintain the old symptoms after operation, and the patient will consider that the surgeon has failed.

4. *Continued presence of sources of infection.*—Under this heading the teeth and the tonsils take principal place. These must be carefully examined and treated, otherwise, if diseased, they will take part in the origination of fresh ulcers.

5. *Improper after-care and diet.*—Operation is to be assisted by careful dietetic and, if necessary, antacid treatment. In all cases the author uses a Lenhartz or a modified von Leube diet for two weeks after operation. After that the diet should be more liberal.—CHARLES BENNETT.

Orthopedic Problems in the After-Treatment of Infantile Paralysis. By R. W. Lovett (*Amer. Jour. Orth. Surgery*, October, 1917).—In this article the author states the five problems which give most trouble in the after-treatment of infantile paralysis.

1. *Prevention and treatment of contractions.*—Contraction occurs early, sometimes within three weeks of the onset of the disease. Contractions of hip and of shoulder are the most difficult to deal with. The author treats all cases of deltoid paralysis or weakness with a platform splint of wire. Hip contraction is most likely to occur where the hip flexors retain some degree of power and the gluteus maximus is weak. In cases which resist stretching, the author performs Soutter fasciotomy without waiting for the lapse of two years.

2. *Braces.*—Braces are to be regarded as protective and conservative rather than therapeutic.

3. *Rest and fatigue.*—The continued use of a quantitative test, combined with clinical observations, has tended to confirm the idea that fatigue is very easily induced after infantile paralysis, and is a detrimental factor of the highest importance.

4. *Muscle training.*—That muscle training is of great value has been definitely shown. Combined with the treatment of rest, it constitutes the most valuable asset that we have; but it has its dangers. Used unskilfully, it is capable of doing two things—(*a*) overtiring the muscles by its overuse, and (*b*), unless

exercises are given with anatomical precision, the child uses the strong muscles rather than the weak, and the muscular balance is injured.

5. *Prognosis.*—This must be very guarded in regard to the power that the patient may ultimately get. If he is not paralysed in all four extremities as well as in back and abdomen—that is, if he has one good arm and one with some power in it, he can be made to walk in some form or other. In the author's experience, about one case in 300 or 400 cannot be made to walk. The most unfavourable cases seem to be those where there is more or less complete loss of power on both sides below a definite level. In these the author feels that there is probably a transverse hæmorrhage of considerable extent.

—CHARLES BENNETT.

Books, Pamphlets, &c., Received.

The Venereal Diseases Problem: A Book more especially for Nurses and Midwives, by J. K. Watson, M.D. London: Baillière, Tindall & Cox. 1917. (2s. 6d. net.)

A Text-Book on Gonorrhœa and its Complications, by Dr. Georges Luys. Translated and edited by Arthur Foerster, M.R.C.S., L.R.C.P. Second revised edition. With 201 illustrations and 3 coloured plates. London: Baillière, Tindall & Cox. 1917. (21s. net.)

Nerve Wounds. Symptomatology of Peripheral Nerve Lesions caused by War Wounds, by J. Tinel. Preface by Professor J. Dejerine. Authorised translation by Fred. Rothwell, B.A.Lond. Revised and edited by Cecil A. Joll, M.B., M.S., B.Sc.Lond., F.R.C.S.Eng. London: Baillière, Tindall & Cox. 1917. (15s. net.)

The Conduction of the Nervous Impulse, by Keith Lucas, Sc.D., F.R.S. Revised by E. D. Adrian, M.B., M.R.C.P. With diagrams. London: Longmans, Green & Co. 1917. (5s. net.)

Radiography and Radiotherapeutics, by Robert Knox, M.D.Edin., M.R.C.S. Eng., L.R.C.P.Lond. Part I: Radiography. With 78 plates (one in colour) and 337 illustrations in the text. London: A. & C. Black. 1917. (30s. net.)

Électrodiagnostic de Guerre—Clinique: Conseil de Réforme Technique et interprétation, par A. Zimmern et Pierre Perol. Collection Horizon. Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1917. (4 fr.)

Troubles Mentaux de Guerre, par Jean Lépine. Collection Horizon. Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1917. (4 fr.)

Encyclopædia Medica. Second edition. Under the General Editorship of J. W. Ballantyne, M.D., C.M., F.R.C.P.E. Vol. V: Filix Mas to Heart. Edinburgh and London: Green & Son, Limited. 1917. (20s. net.)

Tropical Diseases: A Manual of the Diseases of Warm Climates, by Sir Patrick Manson, G.C.M.G., M.D., LL.D.Aberd. With 12 colour and 4 black-and-white plates and 254 figures in the text. Sixth edition, revised throughout and enlarged. London: Cassell & Co., Limited. 1917. (16s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDED 29TH DECEMBER, 1917.

	Week ending				
	Dec. 1.	Dec. 8.	Dec. 15.	Dec. 22.	Dec. 29.
Mean temperature, . .	46·4°	39·5°	38·1°	33·8°	38·0°
Amount of rainfall, . ins.	2·65	0·60	0·73	1·36	0·03
Deaths (corrected), . .	271	296	269	306	315
Death-rates, ...	12·7	13·8	12·6	14·3	14·7
Zymotic death-rates, . .	0·6	0·7	0·6	0·9	0·5
Pulmonary death-rates, .	4·0	4·1	3·2	3·9	4·3
DEATHS—					
Under 1 year, . . .	52	65	51	50	45
60 years and upwards, .	92	64	85	100	93
DEATHS FROM—					
Small-pox, ...	...	...	...	...	...
Measles, ...	6	3	1	3	3
Scarlet fever, ...	...	...	...	1	...
Diphtheria, ...	6	5	6	7	1
Whooping-cough, . . .	3	7	5	9	7
Enteric fever, ...	...	1	2	...	...
Cerebro-spinal fever, . .	2	1	...	...	...
Diarrhœa (under 2 years of age),	3	7	7	3	2
Bronchitis, pneumonia, and pleurisy, ...	68	67	49	58	71
CASES REPORTED—					
Small-pox, ...	...	...	...	...	...
Cerebro-spinal meningitis, .	3	1	1	1	...
Diphtheria and membranous croup, ...	39	42	32	35	28
Erysipelas, ...	17	14	11	20	13
Scarlet fever, ...	22	40	23	31	19
Typhus fever, . . .	...	1	...	...	...
Enteric fever, ...	1	2	...	2	...
Phthisis, ...	49	48	37	35	44
Puerperal fever, . . .	3	1	1	2	4
Measles,*	58	105	61	53	40
Ophthalmia neonatorum, .	8	9	7	10	7

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *7th January*, 1918.

THE

GLASGOW MEDICAL JOURNAL.

No. II. FEBRUARY, 1918.

ORIGINAL ARTICLES.

THE ANTE-NATAL TREATMENT OF CONGENITAL SYPHILIS WITH SALVARSAN.

By LEONARD FINDLAY, M.D., D.Sc.,
Visiting Physician, Royal Hospital for Sick Children, Glasgow.

THE anti-venereal campaign has received the benediction of the Government, and all authorities interested are occupied devising schemes for making it as efficient and successful as possible. The present is therefore a most opportune time for recording our experiences of the results of the different methods adopted in the treatment of these diseases (gonorrhœa and syphilis), so that the past work of value will be at the disposal of these authorities.

The present contribution deals wholly with one aspect of the subject, viz., ante-natal treatment of syphilis.

It has always been the recognised practice to institute anti-syphilitic treatment by means of mercury and potassium iodide in the case of any pregnant syphilitic mother, and there is no doubt that if the treatment is commenced early and thoroughly applied, success in the form of a healthy and non-syphilitic infant will usually, though not invariably, be the result. Pinard, Champetier de Ribes, and Polocki,[1] with prolonged treatment with mercury and potassium iodide, obtained 75·9 per cent of the children healthy.

One rather serious drawback to this method of treatment is the fact that if it is interrupted after delivery, and not commenced again during the next pregnancy, the subsequent child will almost certainly be syphilitic. That the method, even when carried out apparently with great thoroughness, is not invariably successful, and that it has no influence on subsequent pregnancies, is well exemplified in the following family histories:—

CASE I.—D. family. Mother never had any specific manifestations. There have been six pregnancies.

1. Girl, æt. 9 years; well.
2. Girl; died at age of 1 week.
3. Still-birth.
4. Typical syphilitic child; died at age of 5½ months.
5. Still-birth.
6. Boy; seen at the age of 5 weeks with typical congenital syphilis. Rash and other specific manifestations cleared up under mercurial inunction, but the child developed convulsions and died at the age of 4 months.

The mother had been treated continuously with perchloride of mercury and potassium iodide for two years before the birth of this, the sixth, child.

CASE II.—I. family. Father alive and well. Mother had been seen by me four months before becoming pregnant with the fifth child. She complained of nocturnal headaches and had a sore throat, but no rash or any evidence of a primary sore. She was treated with mercury and potassium iodide with great improvement in these symptoms. This medicine had been continued without intermission until after the birth of the fifth child. There had been in all five pregnancies.

1. Four children alive and well, and with no evidence of syphilis.

5. Girl; seen at the age of 1 month with snuffles, but no other evidence of syphilis. The mother was advised to continue treatment with mercury and potassium iodide, but the child's diet was simply regulated. She returned at the age of 4 months with a coppery-coloured scaly eruption on face, arms, and legs, desquamation of palms and soles, and enlarged spleen.

Perhaps it might be held that mercurial treatment should have been instituted in the case of the infant when first seen, but it was desired to await events and to test the efficiency of mercurial treatment of the mother. It is, in any case, questionable if one is justified in making a diagnosis of syphilis on the strength of snuffles alone.

CASE III.—F. family. Father a dock labourer, and said to be well. Mother gave no specific history. At the time of observation she was four and a half months pregnant, and the Wassermann reaction and luetin test were both positive. There had been six previous pregnancies.

1. Six months' miscarriage.
2. Seven months' miscarriage.
3. Eight months' miscarriage.
4. Eight months' miscarriage.
5. Boy, aged 2½ years; always well, with the exception of diphtheria and measles. Never had any manifestations of syphilis. Wassermann reaction negative.

The mother had been treated with mercury and potassium iodide during the pregnancy of this child.

6. Full-time child; only lived eight hours. The mother received no treatment during the pregnancy of this child.

CASE IV.—C. family. Came under observation on 2nd February, 1917. Father and mother alive and well. Wassermann reaction positive in mother. Father never seen. Eight pregnancies.

1. Girl, 12 years; always well.
2. Girl; died at the age of 2 years of scarlet fever. The

mother suffered after the birth of this child from "blood poisoning," characterised by sore throat, rash on body, and vaginal discharge.

3. Full-time; still-birth.
4. Full-time; still-birth.
5. Seven months' child; still-born.
6. Eight months' child; still-born.
7. Boy, aged 1 year and 9 months. Wassermann reaction negative.

The mother was treated with anti-syphilitic medicine during this pregnancy.

8. Girl, aged 7 months; seen with typical syphilitic osteitis. The mother received no treatment during this pregnancy.

It is thus seen that of these four syphilitic mothers, in one treatment before and during pregnancy did not enable her to bear a healthy child. In the other three the treatment was quite successful, so far as the result of the pregnancy during which treatment was carried out is concerned; but in all the next pregnancy, during which no treatment was adopted, terminated in the birth of a definitely syphilitic child.

Ante-natal treatment with salvarsan stands in marked contrast to the above. Not only would it seem possible to start it much later and yet be successful, but it has apparently the great merit of enabling the mother, in the absence of further treatment, to continue to bear to the same husband—who, it will be noted, has never been treated, at least to my knowledge—healthy, unsyphilitic children.

The method is no new one. It had been adopted by Jeauseline and Galliot, Sauvage and Fabre, and Bourret.[2] The two latter obtained by this method 100 per cent of healthy children. Stimulated by these results, I commenced this method some years ago, and in this *Journal*[3] recorded the immediate results. In all, I treated seven pregnant women by the injection of neosalvarsan intravenously, and attained in every instance a healthy and non-syphilitic child. During the three or four years which have elapsed since these women underwent the course of salvarsan therapy, five of them have been pregnant again, and in three instances even for a third time, and apparently on all occasions with the delivery of a healthy infant. In no case was any subsequent treatment adopted, except in one, in rather irregular fashion, and, so far as I can gather, the father had not been treated. It is this "late or continued" effect of the ante-natal treatment with salvarsan that induces me at this time to record the further histories of the women so treated, and to compare the results so obtained with those following mercurial treatment alone. It should be stated that, in addition to salvarsan intravenously, all the patients received mercury either by inunction or *per os*.

Case V.—M. family. Father alive and well. Mother had been subject to an ulcer of the leg, which always troubled her until after treatment with mercury and potassium iodide and salvarsan. Seven pregnancies.

1. Boy: had symptoms suggestive of syphilis at 6 weeks. Wassermann reaction negative at age of 10½ years.

2. Girl: had symptoms of syphilis at 6 weeks. Died of pneumonia at 10 months.

3. Girl: always well. Wassermann reaction negative at 8 years.

4. Boy: always well. Wassermann reaction negative at 6 years.

5. Boy: seen at the age of 9 months with typical congenital syphilis. Wassermann reaction positive. Died from general tuberculosis at 1 year.

6. Boy: always well. Wassermann reaction negative at age of 2 years.

Mother was treated when seven months' pregnant with this child with neosalvarsan intravenously and mercurial inunction. Wassermann reaction at end of treatment positive, but weak: Wassermann reaction six months after birth of 7th child negative.

7. Boy: always well. Seen at age of 10 months. Wassermann reaction negative. Mother received no treatment during this pregnancy.

Case VI.—M'N. family. Came under observation on 27th December, 1913. Father alive and well: Wassermann reaction (5th January, 1918) negative. Had been married previously, and had one child who was seen at age of 16 years with scarring of the lips, but the Wassermann reaction was negative (5th January, 1918). He had suffered twelve years ago (*i.e.*, before his second marriage) from sore throat, which was diagnosed and treated as syphilis, but he has received no treatment since. Mother never had any specific manifestations. Wassermann reaction positive (27th December, 1913). Seven pregnancies.

1. Boy: died at 10 months of age from "bronchial asthma."

2. Girl; died at age of 8 months.

3. Boy; living at 6 years. Wassermann reaction positive at 3 years.

4. Boy; seen at the age of 13 weeks (27th December, 1913) with typical congenital syphilis, as evidenced by rash, snuffles, hacking of lips, and positive Wassermann reaction. Treated by mercurial inunctions and neosalvarsan intravenously: received 1·42 grm. in eleven injections. At end of course of treatment developed measles and died. Mother at the same time was treated with hydrarg. perchlor. and potass. iodid., but on 30th September, 1914, when seven months pregnant, the Wassermann reaction was still positive. She was given four injections of 0·3 grm. neosalvarsan intravenously at weekly intervals from 30th September till 21st October, 1914. Mother has received no treatment since.

5. Boy; born 10th December, 1914. At age of 3 months presented no evidence of syphilis, and the Wassermann reaction was negative; but bronchitis was present, and there developed later broncho-pneumonia, from which the child died at the age of 4 months. *Post-mortem* examination revealed broncho-pneumonia, but nothing suspicious of syphilis.

6. Girl: born 24th January, 1916. Seen at age of 4 months, and presented nothing suspicious of syphilis: Wassermann reaction was negative. She died, however, at the age of 6 months from broncho-pneumonia.

7. Boy: born 12th June, 1917. Never any symptoms of syphilis. Wassermann reaction at 6 months negative.

CASE VII.—K. family. First came under observation on 23rd October, 1913. Father said to be healthy. Mother never had any specific manifestations. Five pregnancies.

1. Boy; developed rash on body soon after birth, and died at the age of 2 months.

2. Eighth-month child; only lived one month.

3. Girl: at 4 weeks of age developed rash and snuffles. When seen at the age of 7 weeks (23rd October, 1913) was suffering from severe syphilis—extensive rash, hacking of the lips, snuffles, and much enlarged spleen. Died one week later.

When mother was two months pregnant with the next child she received five injections of 0·6 grm. neosalvarsan each from 23rd April, 1914, to 1st July, 1914. Wassermann reaction was still slightly positive. She resented the inconvenience of the treatment very much, and it was carried out somewhat irregularly. During the whole course of the pregnancy a mixture, containing potass. iodid. and hydrarg. perchlor., was taken.

4. Boy; born 2nd November, 1914. At 4 months he was very well, and Wassermann reaction was negative. Seen again at the age of 3 years, and appeared the picture of health.

5. Girl: born 7th January, 1916. Seen at the age of 1 year well: no history of syphilis.* Mother took intermittently during the first four or five months of this pregnancy potass. iodid. and hydrarg. perchlor.

Case VIII.—Mrs. R. She had had six pregnancies previous to salvarsan therapy. Only one of the children was living, and he gave a positive Wassermann reaction, and presented a hot-cross-bun head. The last child (sixth) was under my care for typical congenital syphilis, and was treated with ung. hydrarg. and neosalvarsan intravenously, but later developed broncho-pneumonia and died.

10th February, 1914.—Mother two months pregnant; Wassermann reaction positive. Potass. iodid. and hydrarg. perchlor. prescribed.

4th March.—0·6 grm. neosalvarsan intravenously.

18th March.—0·6 grm. neosalvarsan intravenously.

1st April.—0·6 grm. neosalvarsan intravenously.

15th April.—0·6 grm. neosalvarsan intravenously. Wassermann reaction still positive. Ung. hydrarg. prescribed in place of mixture.

22nd May.—0·3 grm. neosalvarsan intravenously.

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* Mother would not permit blood to be withdrawn for the performance of Wassermann's test.

27th May.—0·3 grm. neosalvarsan intravenously.

3rd June.—0·3 grm. neosalvarsan intravenously. Wassermann reaction negative.

12th June.—0·3 grm. neosalvarsan intravenously. Mother received no more treatment.

25th July.—Seventh child born, girl. Wassermann reaction negative (March, 1915). Died April, 1915, from whooping-cough and pneumonia.

19th September, 1915.—Eighth child born, girl. Never had any specific manifestations. Developed symptoms of dysentery on return of father from Gallipoli with this complaint, and died 4th December, 1916.

28th March, 1917.—Ninth child born, girl. Had measles at 7 months, but never presented any specific manifestations.

Seen at the age of 11 months and appeared in good health, but mother would not permit blood to be withdrawn for Wassermann's test; her own blood at this time (14th January, 1918) gave negative result.

CASE IX.—Mrs. S. Seven pregnancies previous to salvarsan therapy. First six children all living and well, and sixth gave negative Wassermann reaction. The seventh child was under my care for typical congenital syphilis, and gave a positive Wassermann reaction. She was treated with mercurial inunctions and a series of eleven intravenous and intramuscular injections of neosalvarsan, receiving in all 1·15 grm. of the drug. One year after the last injection the Wassermann reaction was still negative.

22nd April, 1914.—Two months pregnant: Wassermann reaction positive. Mercurial inunction commenced. 0·6 grm. neosalvarsan intravenously.

6th May.—0·6 grm. neosalvarsan intravenously.

20th May.—0·6 grm. neosalvarsan intravenously.

3rd June.—0·6 grm. neosalvarsan intravenously.

8th June.—Wassermann reaction negative.

1st July.—0·6 grm. neosalvarsan intravenously.

7th December.—Eighth child born, boy. At 3 months well, with negative Wassermann reaction: never any manifestations of syphilis, and seen at 3 years, when he appeared well.

7th June, 1916.—Ninth child born, girl; still-birth.

5th January, 1918.—Tenth child born, girl. Seen at 2 weeks, and appeared quite healthy.

19th January.—Wassermann reaction in mother negative.

In spite of the paucity of material on which this communication is founded, the following conclusions seem warranted:—

CONCLUSIONS.

1. Ante-natal treatment with salvarsan, reinforced by mercury, is superior to that with mercury alone.
2. By this method not only is a larger proportion of the children healthy—various statistics record 100 per cent of healthy children—but it would seem that without further treatment the mother can continue to bear healthy infants.
3. It would seem advisable, in view of the above results, that all records of miscarriages and still-births should be kept, and those due to syphilis determined, when the syphilitic mothers could be treated with mercury and salvarsan, and the health of their future children almost certainly guaranteed.

REFERENCES.

[1] Quoted by Galliot, *loc. cit.*

[2] Galliot, *Archiv. d. Med. d. Enfant*, 1913, part 16, p. 892.

[3] Findlay and Robertson, *Glasgow Medical Journal*, May, 1915.

ORIGIN AND PROGRESS OF THE GLASGOW AND WEST OF SCOTLAND CO-OPERATION OF TRAINED NURSES.*

By DAVID NEWMAN, M.D.

It is interesting to look back to the early days of this Institution, now twenty-five years old, and to note the progress that has been made since its birth. Fully to understand the conditions of its origin, we must anticipate its rise into life by a few years.

Prior to 1870, or it may be even later, the nurses in our hospitals learned their art only by long experience in the wards: what they knew they picked up as they went along. They received no systematic instruction, but, nevertheless, many of them proved excellent nurses, and sometimes had qualifications not now commonly found in the modern nurse. I am glad to say, in the Royal Infirmary we have some of them with us still. They became fixtures, they settled down and spent their lives in their hospital, which they looked upon as home. Consequently, private professional nurses were unknown, nurses were not to be had, there were no nursing homes and no organisation, and our sick, not always to their advantage, were nursed by their female relatives. Professional nursing must, therefore, be looked upon as quite a new institution, with very little to look back upon: it has still to make its history and create its traditions.

During the next fifteen years a steady process of evolution had been going on in the large hospitals in Glasgow in respect to the systematic training of nurses. A regular curriculum of work and study was gradually being instituted. At the end of three years' training and service in the wards, if the necessary examinations were passed, the candidate received a certificate showing that she had qualified as a fully-trained nurse. The primary object was to elevate the nursing equipment of the infirmaries, and the immediate effect was to raise the efficiency as well as to improve the class of women who went in for nursing: but now, in place of settling down as in earlier days, the nurse found that the exceptional training given in Glasgow at this time opened a door to superior appointments elsewhere, and, to a marked degree, I am glad to say this still holds good.

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* An address delivered at the twenty-fifth annual meeting of the Co-operation.

This Institution owes much to our hospitals, which, in addition to their other functions, now are really training schools for nurses. To those who have so patiently and industriously conducted the instruction, the public and the Co-operation are much indebted. These teachers have been constantly asking something more of the nurses, so that we in Glasgow may keep the leading place we have so well held in the past. The services of these skilled nurses form one of the direct benefits the public have derived from the rapid advancement of the training carried out in our hospitals.

Soon after the systematic training of nurses was started, a serious and unlooked for trouble arose. It was found that our best nurses, as soon as they qualified, migrated to find employment elsewhere. We were, to a large extent, losing the products of our industry. The nurse was no longer satisfied to settle down to life in a hospital, where the remuneration was small, unless she got promotion: as a private nurse she found steady employment difficult to get in Glasgow, and her income was very precarious. There were no links between the medical and the nursing professions and the people. How, then, were we to keep our trained nurses and make their services easily accessible?

In 1891 Miss Hicks had successfully started a nurses' Co-operation in London, and it occurred to Miss Helen M. Rough that a similar association might be instituted in Glasgow. In May of the following year she submitted a scheme to one or two medical men, and received so much encouragement that she was induced to lay the matter before others. Within a month one hundred doctors had indicated their unqualified approval. With the help of a few friends a circular was issued inviting subscriptions, and in a short time close upon £700 was collected. A provisional committee was appointed, a constitution drawn up, and in terms thereof, at a meeting on 27th

April, 1893, a general committee was elected. The objects were:—

"(*a*) To establish in Glasgow a central Register for thoroughly trained Nurses, where they may be engaged by medical practitioners and the public.

"(*b*) To provide Nurses with regular employment, and, at the same time, a full remuneration for their services.

"(*c*) To establish in Glasgow a Central Home, where, while off duty, Nurses may live comfortably at moderate charges.

"(*d*) To provide a fund for the benefit of the Nurses of the Co-operation."

All these proposals have been completely carried out with the exception of the last mentioned, with respect to which our objects have not yet been realised. A Sick Fund was created in 1908, and lately the Committee have presented a project, and a Benevolent Fund is now (1918) being formed.

The house at 18 Sardinia Terrace, still the home of the Co-operation, was leased for five and a half years from Martinmas, 1893. Miss Rough was appointed Lady Superintendent, Miss Mary Fleming assistant, and soon the Association was in a position to begin business.

All beginnings are difficult, and the early life of the Co-operation was no exception. At first nurses were timid to join the new venture, so that during the first year we had only 31 on the register (earnings, £293) and the commission paid was only £21. It was therefore not surprising that during the first three years, when the number on the roll was under 45, each year ended in a deficit. In 1897 we had for the first time a credit balance, and from that time onward we have always had a substantial sum to the good.

To show the rapid progress we made after getting a fair start I may quote remarks I made at the twelfth annual meeting. In moving the adoption of the report at the sixth annual meeting in 1898, after giving details as to the development and growth of the Co-operation, I said, "These figures show at a glance and in a very convincing manner, the progress made during the last five years. Taking these figures as a basis for calculation, it might be safely concluded that, during the next five years, we may require to supply nurses for considerably over 4,000 cases." (The actual number of cases nursed during the five years, from 1899 to 1903 inclusive, amounted to 6,836, or nearly three-fourths more than I anticipated.)

Up to this time (1904) we managed well, but the Executive foresaw difficulties from lack of accommodation for the resident nurses, hence it was found necessary to acquire the adjoining house, which we purchased on 15th May, 1905. Our late President, Mrs. John Elder, LL.D., presented the Co-operation with £1,100, to meet the expenses of the extended and improved premises.

In 1906 the question of establishing a Sick Fund was considered. From time to time cases requiring assistance had been brought forward and suitable help given from the ordinary funds of the Co-operation. In order to put the Fund on a substantial basis it was necessary to get donations and acquire additional capital by means of a bazaar, which was held on 21st, 22nd, and 23rd November, 1908, and all parts of the West of Scotland vied with one another to make it a success. After paying expenses, there was £3,523 available for investment. The capital of our Sick Fund now (1918), including £1,217 of accumulated revenue, amounts to £4,902. The income of the Sick Fund this year was £208, 0s. 3d., and the payments made to those requiring benefit came to £94, 17s. 7d.

In the early years of the Association, when the nurses were all young women, there was no call for a Pension Fund, or a fund from which a compassionate grant might be given. But gradually conditions are changing. After her training is completed, the period of active employment of a nurse is comparatively short, seldom exceeding twenty years, and during that time in many cases little can be saved—nothing can be put aside—when the nurse has aged parents dependent on her for help.

If she is wholly dependent upon her profession, it is very difficult for her to make suitable provision for the time when her services cease to be called for. The demand for assistance may be small at present, but undoubtedly in the course of a few years considerable calls will be made for help. It is against that time we desire to make provision. The Association has been very successful in its enterprises, and now that we have a good capital (£3,118, 12s. 2d.) I cannot see any objection, in the near future, to devoting to the Benevolent Fund a portion of our yearly balance. But this is not enough for 180 nurses. The Executive Committee trust that all those who are interested in the comfort and welfare of the old nurses will lend a helping hand.

I earnestly appeal to the public, but especially to those who remain of the 35,000 patients who have received direct benefits from the Co-operation during the last twenty-five years, to give us funds so that when it is really required we may assist good women who have spent their days and nights alleviating suffering and prolonging life. A circular was issued in February last asking donations, and I am glad to report that we have already received £1,609. The sum aimed at is £3,000.

I may now make a few remarks respecting the qualifications required for admission to the Association. At first we demanded that the nurse should have a three years' hospital training, and a certificate showing that she had passed the necessary examinations.

Before five years had passed we were receiving a larger number of applications for admission than we actually required. This placed us in a strong position, and encouraged us not only to raise the standard from time to time, but also to make a careful selection of the women most suitable to carry on the work. We were thus enabled to supply the public with the best nurses to be procured. In this the Association has taken a lead. For example, since 1902 no maternity nurse has been admitted who has not had a three years' hospital training in a general hospital, and for many years all the nurses have been required to take some special training, say, in mental diseases, fevers, midwifery, or massage in addition to their general training in medical and surgical nursing. The advantage of this arrangement is that the Lady Superintendent can select a special nurse for any particular case.

Now, I must deal with a question of interest to the nurses—their earnings and the commission. In the early years the commission was 10 per cent, but in 1908 we were able to modify the charges. It was arranged that new members pay 10 per cent for the first two years, 7½ per cent for the next five years, and thereafter 5 per cent. New members, it was recognised, inherit considerable advantages for which they pay no entry money. As regards earnings, during this year eight nurses earned over £100, twenty-six over £90, twenty-seven over £80, and the remainder over £70. This without any increase in the fees charged, and no war bonus.

On the declaration of war eighty nurses enrolled for service, and by doing so suffered financially, as the pay in the navy and army is much less than the remuneration from private work. I am happy to say many have distinguished themselves in the services, and eight have been decorated. I may give their names:—Jean Lyle, Mary Merrilees, Mary S. Temple, Elizabeth Beaton, Isabella M. Beaton, Isabella Colvin, Jean Dunlop, and many others have been mentioned in despatches. We will gladly welcome them back at the end of the war: meantime their places have been filled, and the Co-operation is almost as fully equipped as it was before the war.

It may be a little invidious to mention names in connection with the work of the Association, but, where all have worked so loyally, I am certain I shall not provoke anything but good feeling among the friends of the Co-operation when I bring forward one or two names not to be forgotten.

Our first President, the late Mrs. John Elder, LL.D., followed its development, and took a great interest in the growth of the institution. She was one of our strongest supporters. She aided us financially when we greatly required help, and otherwise she was always a kind friend to the nurses. The first Chairman of the Executive Committee, my friend, the late Professor Joseph Coats, was deeply interested in promoting the objects of the Co-operation in its early days, and gave valuable assistance in organising the Institution.

Mrs. James W. Napier was a member of the Executive Committee for eleven years and took an active and lively interest not only in our nurses, but was also on the Board of Management of the Royal Infirmary. She is doing noble work for nurses in Glasgow.

To our esteemed Chairman of the Executive Committee, and to Mr. G. Wink Wight, who has been our Secretary since 1897, much credit is due, because of the unremitting interest they have taken in the affairs of the Co-operation and the interests of the public.

The finance of the Association has been in the hands of our Hon. Treasurer, Colonel Wm. Clark, D.L., for over twenty years. He has always taken an unlimited interest in our welfare, and has been our wise counsellor and kind friend. To his care and capacity our success has been largely due. He has wisely husbanded our resources during the prosperous years, and placed us in a position to withstand any unexpected strain that may await us in the future.

Another name must be in your minds to-day, Miss Helen M. Rough, our much respected Lady Superintendent, who in the early years gave her services without reward. She was truly the founder of the Co-operation, and came forward, as I have tried to show, at the psychological moment, launching the scheme just at the time it was required. From the beginning she has taken a whole-hearted interest in the nurses, in their work, and in their comfort, and has sought in every way to bring the doctor, the nurse, and the patient into easy and complete alliance. Before such institutions existed, not only the general practitioners but the hospital physicians and surgeons had great difficulty in finding nurses, and the patient suffered accordingly. Now, not only can the family doctor get a thoroughly trained nurse at a moment's notice, but he can obtain one specially trained to meet the peculiar requirements of an individual case. Miss Rough has the nurses segregated, so that she can put her finger on the right woman at the right time, and the result of all this careful organisation is in the highest degree satisfactory to the public, the doctor, and the nurse. And I am sure one and all of them appreciate very highly the results of her unceasing labours on their behalf.

CASE OF METASTATIC CANCER OF THE BONE–MARROW WITHOUT ERYTHROBLASTIC REACTION.

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AND

JOHN H. TEACHER, M.D.,
Pathologist to the Glasgow Royal Infirmary; St. Mungo (Notman) Professor of Pathology, University of Glasgow.

ATTENTION has been directed of recent years to the value of examination of the blood in cases where metastatic cancer of bone or of bone-marrow is suspected to exist as a complication of visceral character. It has long been known that in certain instances cancer of the stomach may closely simulate pernicious anæmia in its general symptomatology, but that the anæmia accompanying cancer is usually found upon examination to be of the chlorotic type, with a low colour index, and without the presence of erythroblasts. It has been more recently shown, among others by Harrington and Teacher[1] in the pages of this *Journal*, and by Harrington and Kennedy[2] in the *Lancet*, that when such cases are complicated by the occurrence of bony metastases, the blood picture may change, and that the appearances usually considered characteristic of pernicious anæmia may be very closely reproduced. At the close of the second paper by Harrington and Teacher, it is indeed stated "that in any case of carcinoma, bone pains and an anæmia with high colour index and myelæmia should suggest the diagnosis of carcinoma of the bone-marrow." There can be little doubt that the statement is justified, yet that such an anæmia is not a necessary consequence of carcinoma of the bone-marrow appears from a case published by J. C. Middleton[3] shortly afterwards, and also from that which forms the subject of this paper.

The patient, G. D., a labourer, aged 58 years, was admitted to the wards of Dr. W. R. Jack on 6th November, 1917, with a history of pain in the stomach, nausea, vomiting, and occasional attacks of diarrhœa of two years' duration. His family history had no bearing upon the case; he had had no other illnesses but those of childhood; and he had suffered two years ago from a fracture of the right femur, which had healed normally. About that time, or shortly afterwards, he began to complain of abdominal pain coming on soon after food, and followed by vomiting, the food coming up in mouthfuls without much feeling of sickness, and having a very bitter taste. He never vomited either blood or "coffee-ground" material. These symptoms were accompanied by loss of flesh and strength, and by occasional sharp attacks of diarrhœa, the stools, however, never being noticeably dark. As his condition rapidly deteriorated, he was admitted a year ago to Mr. Paterson's wards in the Royal Infirmary, where, upon opening the abdomen, a large malignant tumour was found to be present in the stomach. As it was inoperable, a gastro-enterostomy was performed, and from this he got some relief for a time, although his pain after meals never entirely disappeared, and ultimately became severe enough to keep him from eating in spite of a craving for food. It was always relieved by vomiting, and was localised to the upper epigastrium. Emaciation also rapidly progressed.

On admission he was found to be much wasted, and stated that he had lost 4½ st. in weight during the past year. His face had an anxious expression, and his skin was of a dirty yellowish pallor. The arteries were distinctly thickened and tortuous, but the heart showed no definite abnormality. He had a troublesome cough, and there was a slight degree of bronchitis. The few teeth he had were bad, and the tongue was coated with a moist fur. The scar of the former operation was visible in the epigastrium. No definite tumour could be palpated, but there was distinct rigidity of both recti, and in the middle line just below the xiphoid cartilage there was a localised area highly tender to palpation. No dilatation of the stomach could be made out. Neither liver nor spleen was enlarged; no enlarged glands were to be found in the neck: and the urine was normal. Gastric analysis after a test-meal revealed an almost complete achylia, the total acidity being 2, with no free hydrochloric acid, and only a trace of lactic acid.

His condition went from bad to worse, and about ten days after admission he began to complain of pain over the lower end of the sternum, where pressure on the bone elicited tenderness. A little later he had also pain in the back, in the region of the lumbar vertebræ. As bony metastases were suspected, the blood was examined. The red cells numbered 3,390,000 per c.mm., the white cells 15,000. The percentage of hæmoglobin was 45, and the colour index was therefore 0·67. Films showed a moderate degree of poikilocytosis, but no nucleated red cells nor polychromatophilia. The blood picture was that of an anæmia of the chlorotic type, with no evidence of erythroblastic reaction.

The bone pains increased in severity, and were also felt over the lower ribs on the left side. On 20th November small scattered nodules were noted under the skin of the abdominal wall in the epigastric and umbilical regions. He gradually sank, and died on the morning of 1st December, 1917.

The *post-mortem* examination was performed by Professor Teacher, and the following is his report:—

The body was that of an old-looking man, highly anæmic, and emaciated to the last degree. There were several small nodules in the skin of the abdomen. One of these was close to the cicatrix of the old operation. They were clearly secondary cancerous tumours.

Thorax.—The *heart* was flabby and emaciated. There was one small tumour in the fat on the front of the heart. The arteries were somewhat rigid, but patchy atheroma was slight, both in them and the aorta.

The *lungs* were both generally adherent. There was an early patchy pneumonia at the right base. There were a number of tumour nodules on the surface of the left lung, clearly spreading from a large mass in the eighth rib. There were no nodules in the lungs.

Abdomen.—The *liver* contained a few secondary tumours mostly of considerable size up to that of a walnut. The spleen was somewhat large and soft, and free from tumours.

The *kidneys* showed moderate cloudy swelling. Neither of them contained tumours.

The *stomach* was small, but the cardiac end and fundus presented fairly normal characters. The pyloric region was occupied by a tumour about the size of a tennis ball, which completely encircled the organ. There was a very narrow tortuous passage through it to the duodenum. There was no encroachment of the tumour upon the duodenum. The gastro-enterostomy wound was situated low down on the anterior surface of the stomach. The tumour had extended about two-thirds round the orifice, which nevertheless admitted one finger quite freely. The rigidity of the tumour caused the orifice to stand widely open, and it was of oval shape. The lips were about a quarter of an inch thick. There was no extension into the jejunum. There were several glands invaded by tumour close to the primary growth, but none in the portal fissure. There was no obstruction of the bile ducts. There were also several invaded glands in the upper part of the mesentery. The transverse colon passed behind the union of the stomach and the jejunum; it was freely movable, and not invaded by tumour. The intestines generally were somewhat atrophic, but otherwise normal. There were no peritoneal tumours.

Bones.—There were a number of small secondary tumours in the lower part of the sternum, and another in the lower part of the manubrium sterni. There was a large mass occupying about three inches of the eighth rib which had extended into the pleural membrane over a considerable area. The fourth right and seventh left ribs were easily broken owing to the presence of tumour; the other ribs were quite strong. Portions of ribs, which were kept, were sawn after hardening in formalin. With the exception of the eighth, which was extensively involved, they showed little secondary infection. There were a considerable number of small nodules, but for the most part the cancellous tissue was occupied by red marrow.

There was an old fracture about the junction of the upper and middle thirds of the right femur. This was not due to tumour. The marrow in the middle of the left femur was fatty, with one small red area which appeared to be tumour. There was, therefore, no marked erythroblastic reaction. There were a few small nodules in the tenth and eleventh vertebral bodies, and there was a marked osteoarthritic thickening between the eleventh and twelfth vertebral bodies.

In this case, then, as in that of J. C. Middleton, there were secondary tumours in the bone-marrow, implicating a considerable number of bones, and yet the blood presented none of the characters of pernicious anæmia. In Middleton's case the sternum was so much affected that it broke during removal, as did two ribs during removal of the lungs: the vertebral bodies contained many tumours, and there were nodules in the upper end of the right femur and in the cavity of the shaft. In the present case, as will be seen from the above report, the distribution was somewhat similar, although the vertebræ were less extensively affected. In both there was no erythroblastic reaction, the marrow generally, in Middleton's case, being soft, gelatinous, and brownish, and showing atrophy and loss of fat, while in the present case the femoral marrow was definitely fatty.

The main difference between these two more recent cases and those of Harrington and Teacher—a difference which probably accounts for the absence of the characteristic blood picture in the later cases—was in the condition of the bone-marrow. As Middleton[3] has already pointed out, in the cases published by Harrington and Teacher and by Harrington and Kennedy erythroblastic proliferation of the bone-marrow was a most striking feature, and this reaction was probably due in these cases to the much greater extent to which the bone-marrow was invaded. Whereas in his case and the present one the invasion might be called massive only in the sternum and one or two of the ribs, while in other bones the secondaries formed only isolated nodules, in the former cases tumour tissue was very abundantly present in most of the bones invaded; and this greater violence of attack may be held to have led to a more vigorous regenerative effort.

There is, however, an alternative explanation which would seem to be at least possible. If we compare pernicious anæmia with the rarer aplastic anæmia, we find that both of them are severe anæmias attended with great destruction of red cells and leading inexorably to death within a few months or years, and that the main difference between them, as far as the blood and bone-marrow are concerned, is the more or less successful attempt at regeneration in the former, and its complete absence in the latter, in which there is no erythroblastic reaction and nucleated red cells are almost entirely absent from the blood.

In some cases of aplastic anæmia, says Gulland,[4] "the aplasia appears to be due to the severity of the toxin, so that regeneration never takes place." It is not easily to be supposed that the toxic effects of all cancers are of equal severity; it is infinitely more probable that they vary within wide limits; and this supposition corresponds with the extreme and rapid cachexia which sometimes accompanies relatively small tumours, and the comparative tolerance with which in some cases the organism may put up with large ones for a considerable length of time. It is then possible theoretically to hold, on the analogy of aplastic anæmia, that erythroblastic reaction may be absent in certain cases of carcinoma of the bone-marrow because of the virulence of the toxins in these particular cases.

Whatever the true explanation may be, it is of interest to note that the characteristic blood picture of pernicious anæmia in cases of visceral cancer attended with bone pains, while it suggests metastatic cancer of the bone-marrow, is not a necessary accompaniment of its presence: and that such a diagnosis may be justifiably made on the evidence of bone pains alone in cases where the anæmia is of a purely chlorotic type.

REFERENCES.

[1] Harrington and Teacher, *Glasgow Medical Journal*, April, 1910, and February, 1915.

[2] Harrington and Kennedy, *Lancet*, 8th February, 1913.

[3] J. C. Middleton, *Glasgow Medical Journal*, April, 1915.

[4] Gulland, *The Blood*, 1914, second edition, p. 176 (Edinburgh and London: W. Green & Son).

Obituary.

ON SERVICE.

CAPTAIN ALEC ROBB-SMITH, M.B., C.M. GLASG., ROYAL ARMY MEDICAL CORPS.

WE regret to announce the death of Captain Alec Robb-Smith, which took place at a service hospital on 15th December. Captain Robb-Smith graduated M.B., C.M. at Glasgow University in 1892, and thereafter spent several years in hospital appointments. He was medical superintendent in Paisley Infirmary and in the Fever Hospital of the same town. Later, he occupied similar posts in Gockston Small-pox Hospital and Croydon Borough Hospital. Early in the war he joined the Royal Army Medical Corps, and was promoted Captain after one year's service.

CAPTAIN NORMAN M'GAAN SMITH, M.B., CH.B. GLASG., ROYAL ARMY MEDICAL CORPS.

WE regret to announce that Captain Norman M'Gaan Smith died of wounds on 12th December. Captain Smith, who was a son of the Honourable Adam Smith, Trinidad, graduated M.B., Ch.B. at Glasgow University in 1915, and joined the Royal Army Medical Corps immediately after graduation. He was promoted to the rank of Captain about eighteen months ago.

CAPTAIN R. W. CUNNINGHAM, M.B., CH.B. GLASG., AUSTRALIAN ARMY MEDICAL CORPS.

WE regret to learn that Captain R. W. Cunningham died suddenly at Latrobe, Tasmania, on 10th December. Captain

Cunningham, who graduated at Glasgow University only about eighteen months ago, was the elder son of the late Surgeon-Major R. W. Cunningham, Indian Medical Service.

ROBERT PERRY, M.D. GLASG.,
GLASGOW.

WE regret to announce the death of Dr. Robert Perry, one of the oldest and best known physicians in the city, which took place at his residence, 11 Queen's Terrace, West Princes Street, on 4th January. Dr. Perry, who was a native of Glasgow, was born in October, 1827, and was, therefore, over 90 years of age. He took the degree of M.D. with honours at Glasgow University in 1851, and first practised for over five years at Egremont in Cumberland. Then he spent a considerable time pursuing medical studies on the Continent, after which he settled down in his native city, becoming a Fellow of the Faculty of Physicians and Surgeons in 1858. He was for over twenty years a physician in the Royal Infirmary, and for forty-eight years examining officer to the West of Scotland Convalescent Homes, Dunoon. He was a son of Dr. Robert Perry, who first taught the difference between typhus and typhoid, and, like him, he was at one time president of the Royal Faculty of Physicians and Surgeons, Glasgow, his term of office being from 1889 to 1891. Like him also he was always interested in the study of fevers, and some of his most important papers upon the subject appeared in the pages of this *Journal.* In recent years his professional activity had undergone a natural restriction, but he carried on his duties in connection with the Convalescent Homes up till September last, and to an even later date was assiduous in his attendance at meetings of Faculty. He was out so lately as the day before Christmas. Dr. Perry will be remembered with warm feelings of respect and admiration by many who saw in him the best type of a physician of the older school, as well as by the now diminishing number who had the privilege of his personal friendship. He is survived by his wife, three sons, and two daughters. His youngest son has been missing since the battle of Loos, and the two others are on active service.

ALEXANDER SMYTH, M.B., C.M. GLASG.,
GLASGOW.

We regret to announce the death of Mr. Alexander Smyth, which took place suddenly at his residence, 69 Albert Road, Crosshill, on 8th January. Mr. Smyth, who graduated M.B., C.M. at Glasgow University in 1890, was educated also at London and Vienna. In 1898 he gained the diploma of M.R.C.S.Eng.

CHARLES O'NEIL, M.P., M.B., C.M. GLASG.,
COATBRIDGE.

We regret to announce the death of Mr. Charles O'Neil, which took place at his residence, Glenravel House, Coatbridge, on 13th January. Mr. O'Neil, who was in his sixty-ninth year, was a native of County Antrim. He was educated at Glasgow University, where he took the degrees of M.B. and C.M., and was Assistant Professor of Botany at St. Mungo's College from 1897 to 1899. He retired from practice in 1899. In the municipal affairs of Coatbridge he took an active interest, and was for many years a member of the Town Council, and, for a period, a magistrate of the burgh. He also devoted himself to political work, and in 1909 he was elected as Parliamentary representative for South Armagh.

WILLIAM CRAWFORD, M.D. GLASG.,
ARDLAMONT.

We regret to announce the death of Dr. William Crawford, which took place at Glasgow on 14th December. Dr. Crawford graduated M.B., C.M. at Glasgow University in 1869, and three years later began to practise in Uddingston, where he built up a large connection which he maintained for thirty-two years. In 1903 he handed over his work to his son, Dr. G. Morris Crawford, and entered into retirement. Dr. Crawford was deeply interested in the public affairs of his district, where he served for a time as a member of the School Board. His declining health compelled him latterly to take up residence at the Kyles of Bute.

ANDREW MOYES, M.B., C.M. Glasg.,
London.

We regret to announce the death of Mr. Andrew Moyes, which took place at his residence, Ravenscroft Avenue, Golders Green, on 9th January. Mr. Moyes, who was 59 years of age, took the degrees of M.B., C.M., and the diploma in public health, at Glasgow University in 1889. He served as house physician and house surgeon in the Western Infirmary, and was later appointed to the surgical staff of the dispensary in that institution. He also held for a time the appointment of assistant physician to the Glasgow Skin Hospital. Electing to work in London, however, he settled in the north-western district of the capital and built up a large practice. Mr. Moyes was a son of the late Mr. William Moyes, M.A., Glasgow.

JOHN SELKIRK, M.D. Glasg.,
Yorkshire.

We regret to announce the death, at Boston Spa, of Dr. John Selkirk, on 18th December. Dr. Selkirk was a native of Irvine, and graduated in arts and medicine at Glasgow University. He took the first degree in the latter faculty in 1893, and received his doctorate in 1906. He served a term as house surgeon in the Victoria Infirmary before settling to practice at Boston Spa in Yorkshire. Dr. Selkirk worked in partnership with Mr. Scatchard, and held most of the public appointments in the district.

CURRENT TOPICS.

Appointments.—The following appointments have recently been made:—

Royal Navy (7th January): To be temporary Surgeon—J. G. M. Robertson, M.B., Ch.B.Glasg. (1914).

9th January: Temporary Surgeon J. G. M. Robertson, M.B., Ch.B., to Haslar Hospital.

Royal Naval Volunteer Reserve (12th January): To be Staff-Surgeon—Surgeon D. D. F. Macintyre, M.B., Ch.B.Glasg. (1902).

Royal Army Medical Corps (17th December): Temporary Lieutenants to be temporary Captains—E. W. Milne, M.B., Ch.B. Glasg. (1900); R. C. Corbett, M.B., Ch.B.Glasg. (1911).

18th December: Temporary Captain D. Macintyre, M.B., Ch.B. Glasg. (1914), to be Captain (1st December, 1917), with seniority as from 15th May, 1916.

25th December: To be temporary Captain—J. T. Kirkland, M.B., Ch.B.Glasg. (1909).

31st December: Temporary Captain R. Buchanan, M.B., C.M. Glasg. (1895), to be Senior Medical Officer of Tay Defences.

4th January: To be temporary Lieutenant—G. S. Gordon, M.B., Ch.B.Glasg. (1909).

5th January: Temporary Lieutenant to be temporary Captain —W. A. L. Marriott, M.B., Ch.B.Glasg. (1908).

7th January: J. H. N. F. Savy, M.B., Ch.B.Glasg. (1910), late temporary Captain, is granted the honorary rank of Captain.

11th January: To be temporary Lieutenants—G. R. Jeffrey, M.D.Glasg. (M.B., 1902); W. J. B. Lavery, M.B., Ch.B.Glasg. (1916); J. C. Duncanson, M.B., C.M.Glasg. (1888).

Special Reserve (24th December): To be Lieutenant (from Glasgow University Contingent, O.T.C.)—J. A. Stewart, M.B., Ch.B.Glasg. (1917).

Territorial Force (2nd January): To be acting Major—Captain A. Jubb, M.D.Glasg. (M.B., 1898).

HONOURS FOR GLASGOW MEDICAL GRADUATES.—Major (acting Lieutenant-Colonel) J. R. C. Greenlees has been awarded a bar to the D.S.O. Major Greenlees is on the medical staff of the Western Infirmary and the Royal Hospital for Sick Children, Glasgow. He joined the Royal Army Medical Corps as Lieutenant on the outbreak of war, and has distinguished himself on many occasions since.

Lieutenant-Colonel T. Kay has gained the D.S.O. Colonel Kay is one of the visiting surgeons to the Glasgow Royal Infirmary. Although holding the rank of Major in the Territorial Force, he offered himself to the Royal Army Medical Corps when war broke out, and went to the front as a Lieutenant. His promotion, however, was rapid on account of his excellent work, to which tribute has been paid in three despatches.

The Military Cross has been bestowed upon the following officers:—

Captain N. V. Lothian graduated M.B., Ch.B. at Glasgow University in 1912. After serving as house physician in the Western Infirmary, house surgeon in the Royal Infirmary, and as one of the medical officers in Larbert Asylum, he joined the regular army after examination.

Temporary Captain R. R. Archibald graduated in arts, science, and medicine at Glasgow University, the last degree being gained in 1910. He was resident in the Western Infirmary before going to practice in the South of Scotland. Captain Archibald joined the Royal Army Medical Corps on the outbreak of war.

Temporary Captain D. M. Hunter, who graduated in 1913, is an ex-house surgeon of the Western Infirmary, Glasgow.

GLASGOW GRADUATE IN THE CASUALTY LIST.—Lieutenant-Colonel H. C. D. Rankin, a Glasgow graduate of 1911, and a medical officer of the regular army, has been made a prisoner of war.

ORDER OF THE BRITISH EMPIRE.—We are pleased to note that

Sir George T. Beatson, K.C.B., has been created a Knight Commander of the British Empire. As head of the Red Cross Society in Glasgow, Sir George has been unwearying in his labours for that body since the outbreak of war, and it is not too much to say that the present stable position of the movement in Glasgow is largely attributable to his great powers of organisation.

Glasgow Nurses Mentioned in Despatches.—The names of the following members of the Civil Hospital Reserve appeared in Sir Douglas Haig's despatch as being deserving of special mention:—

Miss A. Duncan, acting sister, Glasgow Royal Infirmary.

Miss E. C. Ramsay, acting sister, Eastern District Hospital, Glasgow.

The Training of Nurses.—The State registration of nurses will be successfully sought from Parliament only when an agreed Bill can be presented, and up till now members of the nursing profession have been far from unanimous in their views on several of the questions at issue. It is reported that the negotiations for amalgamation between the College of Nursing and the Royal British Nurses' Association which have been proceeding for some time, and which might have resulted in bringing into existence a new and very powerful force, have now broken down. It appears that the College has powers, in virtue of its charter to admit, as members, nurses of less than three years' training, but the Association will not contemplate the acceptance of women who have not undergone training for at least three years.

Amendment of the Poisons Act.—It was announced in the *London Gazette* on 14th December that the Privy Council have approved of the following resolution passed by the Council of the Pharmaceutical Society of Great Britain:—"That the schedule to the Poisons and Pharmacy Act, 1908, be amended by transferring the following articles from Part 2 thereof to Part 1 thereof:—Diethyl-barbituric acid, and other alky, aryl, or metallic derivatives of barbituric acid, whether described as veronal, proponal, medinal, or by any other trade name, mark, or designation, and all poisonous urethanes and ureides."

RECRUITING MEDICAL ASSESSORS.—The Secretary for Scotland has appointed the gentlemen named below to be medical assessors, at Glasgow centre, to carry out the re-examination and grading of men of military age who having been examined by a National Service medical board have subsequently been granted leave by the appropriate appeal tribunal to be re-examined by the medical assessors:—

Mr. Ebenezer Duncan, M.D., F.R.F.P.S.G.
Mr. David White Finlay, M.D., F.R.C.P.Lond.
Mr. William Robert Jack, M.D., F.R.F.P.S.G.
Mr. George Stevenson Middleton, M.D., F.R.F.P.S.G.
Professor Ralph Stockman, M.D., F.R.C.P.E.
Mr. John Binnie Mackenzie Anderson, M.B., C.M., F.R.F.P.S.G.
Mr. William Maclennan, M.B., C.M.
Sir Thomas Kennedy Dalziel, M.B., C.M., F.R.F.P.S.G.
Mr. James Alexander Adams, M.D., F.R.F.P.S.G.
Mr. David Neilson Knox, M.B., C.M., F.R.F.P.S.G.
Mr. Alfred Ernest Maylard, B.S., F.R.F.P.S.G.
Mr. David Newman, M.D., F.R.F.P.S.G.
Mr. Duncan Macartney, M.D.
Mr. James Grant Andrew, M.B., C.M., F.R.F.P.S.G.
Professor Archibald Young, M.B., C.M., F.R.F.P.S.G.

THE ARMY AND TUBERCULOSIS.—An Order has been made by the Local Government Board altering the Public Health (Tuberculosis) Regulations, 1912 and 1916, so as to provide that medical officers of health, instead of furnishing the Army Council with particulars of male persons between certain specified ages who have been notified as suffering from tuberculosis, shall in future furnish such particulars to the Chief Commissioner of Medical Service at the Ministry of National Service. The object of the Order is to assist the Ministry of National Service, who have now taken over the duties of the Army Council with respect of enlistment into the Army. The operation of the Order is limited to the duration of the present war. The notifications should be forwarded by post in a sealed envelope (which need not be stamped), addressed in the manner prescribed by the Order, and marked "O.H.M.S."

EDINBURGH UNIVERSITY AND TUBERCULOSIS.—At a meeting of the Court of Edinburgh University held on 17th December the Senatus reported that they had approved a recommendation of the Faculty of Medicine that a course of tuberculosis shall be obligatory in the medical curriculum as from October, 1918; that the course shall consist of lectures and practical instruction; that the number of meetings of the class shall be 20; that it shall be open to final year students of the University; and that the class shall be held, if necessary, in two out of the three academic terms. The Court resolved to communicate these proposals to the General Council.

PRINCIPAL SIR ALFRED EWING AND THE SHORTAGE OF DOCTORS.—At the graduation ceremony in Edinburgh University on 19th December Sir Alfred said that the graduation would enable those who had completed their course to proceed to a much-needed service. Never were doctors more wanted, both for the war and for service at home, and he doubted if there was ever a time when the service which doctors could render was more appreciated by the public, and when the profession stood higher in public esteem. It was said that war was not a time for new discoveries in medicine. He did not know whether this was true, but at all events it was true that war was a time when the discoveries already made in medicine were put to the most severe possible test. Ghastly as the horrors of war were, they would be infinitely more ghastly save for what the doctors could do. Of their graduates that day many had come back to complete their course after having given proof on the field or in the Navy of their devotion in the war. As regards the professional value of these gentlemen who had been serving, he had received a letter from the Dean of Faculty of Medicine, who said—"None of those who have given service to the country should regret it. It has, in my opinion, been of inestimable advantage to themselves. They have come back taking their work more seriously and with an experience of life which has done much to form character and self-reliance which should go far to ensure success in their future careers. To doctors especially, I think, the knowledge they have acquired by mixing with so many men of all classes and degrees and of divers professions will be of great advantage, and will supply just that want which might be felt in the normal academic curriculum. I hope you will point out the great need of the country for service from all, including women and students from abroad, at the present time, and the duty of giving this service at once." He felt he could add nothing to these words, which would carry all the more weight because the Dean was a member of the General Medical Council, which was acutely aware of the present dearth of doctors and was much concerned in the steps that had to be taken to alleviate it.

Directions to Medical Boards.—A National Service instruction was issued on 28th December containing general directions for the guidance of commissioners, deputy commissioners, and members of Medical Boards. It is laid down that minor defects, such as of the teeth and of eyesight, which can be removed or compensated for by artificial means, will not be regarded as disqualifications for Grade 1. Examples of men suitable for Grade 3 are those with badly deformed toes, severe flat foot, or some cases of hernia and varicose veins, as well as men who are fit only for clerical and other sedentary occupations, such as tailoring and bootmaking. Recruits will be seen at some stage of their examination by each member of the Board. Where opinions are equally divided the chairman will have the casting vote. It is instructed that if it is suspected that a man has taken drugs with a view of altering the action of the heart he should be referred for observation. Men who have at any period been inmates of asylums, and those who at the time of examination show symptoms of mental disease, should be rejected.

Glasgow Corporation Sanatoria Schemes.—At a meeting held on 10th January the Corporation of Glasgow approved of the proposals by the Health Committee to extend Bellefield Sanatorium and Knightswood Hospital, and to erect a new sanatorium at Southfield for the accommodation of cases of tuberculosis in view of the military occupation of Robroyston Hospital. It is estimated that the additions to Bellefield Sanatorium will cost £33,000 and those to Knightswood Hospital £95,000, the latter to be used temporarily for tuberculosis and thereafter for infectious diseases. The new sanatorium at Southfield is to accommodate 150 children, and is estimated to cost £65,000.

DECLINING BIRTH-RATE.—The births of 23,088 living children were registered in Scotland during the third quarter of the year 1917. These births are 3,084 fewer than in the previous quarter, and 4,055 fewer than in the third quarter of 1916. It is the smallest number of births registered in Scotland in any previous quarter, with the single exception of the first quarter of 1855, when compulsory registration was instituted. The birth-rate for the quarter is 18·8 per thousand, being 2·8 below that for the previous quarter, 3·6 below that for the third quarter of 1916, and 5·2 below the mean of the rates for the third quarters of the preceding five years. The lowest birth-rate previously recorded for any quarter was that for the fourth quarter of 1916, which was 21·0, compared with which the birth-rate for this quarter is 2·2 lower. Of the 23,088 children whose births were registered, 11,781 were male and 11,307 female, the ratio of male to female children being thus 104·2 to 100. In the previous quarter this ratio was 103·5. In the counties, burghs included, the rate ranged from 24·0 in Linlithgow, 22·9 in Dumbarton, and 21·6 in Lanark, to 10·1 in Selkirk, 10·4 in Peebles, and 11·1 in Bute. Of the 23,088 children whose births were registered, 21,265, or 92·1 per cent, were legitimate, and 1,823, or 7·9 per cent, were illegitimate. Marriages registered in Scotland during the quarter numbered 7,824. They are 496 more than in the previous quarter, and 58 more than in the third quarter of 1916. Deaths registered in Scotland during the quarter numbered 13,727. They are 4,884 fewer than in the previous quarter, and 1,299 fewer than in the third quarter of 1916.

THE PROPOSED HEALTH BILL.—A deputation from various associations of County and District Councils was received by

Mr. Hayes Fisher on 9th January. The deputation expressed opposition to the proposed Ministry of Health, and urged that the existing machinery was adequate.

Mr. Hayes Fisher said he believed that the present local bodies were animated by a sincere desire to develop a public health policy, and on the whole with some assistance from the State. They were not afraid to embark on a certain amount of expenditure with a view to satisfying a demand for a better general public health policy. The right order of going was to give the powers which were asked for by a small bill which could be passed through Parliament. "I think," he said, "sooner or later, and sooner if possible, health administration must be co-ordinated, systematised, and developed, not in the interest of the insured only, but in the interests of the people generally." He believed there was no need of any great new Ministry.

Dr. Addison said if they had one Ministry to survey the whole field of public health it would be much easier to give the subject consideration on its merits than when every subject affected the conflicting interests of half a dozen different Departments. The difficulties in the way of consolidation were not so great as many imagined.

FINGER CRACKS.—An interesting discussion, occupying a little space in a weekly contemporary, on the treatment of deep cracks of the finger skin has brought forth some useful prescriptions. It is suggested that cobbler's wax be heated and pressed into the cracks. Another correspondent recommends the use of celluloid solution, of which several coats are painted on until the stretched gap is filled. The principle underlying the treatment is, of course, the prevention of superficial healing until the gap has been filled by new tissue from the bottom upwards.

The discussion recalls remedies which have been household in these countries for generations, or even centuries. Field labourers at harvest time are very liable to have their fingers cut at the natural transverse furrows. These incisions take on a chronic character and remain for an indefinite length of time unless treatment is adopted. Two methods are popular—in one the "hacks" are filled with softened cobbler's wax; the other consists in tying knitting worsted round the finger, so that the cavity of the wound is filled by the band of wool.

These customary remedies must, in harvest circles, have been devised empirically, since a knowledge of the principle could scarcely have existed at the time of their inception, yet science would seem to have added very little to them.

CHOLECYSTECTOMY.—Surgeons of Britain and of the Continental nations have for more than three years been actively engaged in treating, and in the improvement of treatment of, war injuries, and their work in what may be termed surgical diseases of civilian life has of necessity been reduced to the essential minimum. Even a very casual survey of British and French medical periodicals issued during the war is sufficient to establish this, since literary output must be taken as the index of actual surgical work.

Our Transatlantic brethren, on the other hand, were for more than two years in the position of neutral onlookers so far as the great strife was concerned, and were thus enabled to push on the development of lines of surgery which are only now emerging from the region of dispute to that of general acceptance. In this respect American surgeons have acted as trustees of the common property during the unavoidable absence of their European colleagues on war service. That they have not abused their trust is immediately evident on examination of three years' work as published in their scientific journals.

Perhaps more than any other subject that of the treatment of gall-bladder affections has been given prominence. In 1914 it could not have been claimed that the operation of cholecystectomy met with approval by even a majority of operators, but to-day we have to accept it as standard treatment for the great bulk of gall-bladder diseases. It seems strange that less than a quarter of a century ago the mere opening of the gall-bladder for the removal of stones was causing a great stir in surgical circles, and was being performed by only the most enterprising and daring of surgeons. Yet now complete removal of the organ is so generally accepted that discussion only centres round the question whether the excision should be commenced at the fundus or near the termination of the cystic duct.

There is no intention here to disparage the work of British surgeons, since the pioneer labours of Mayo-Robson and of Moynihan never can be lost sight of, but, at the same time, it must not be forgotten that the teachings of Rosenow—in which he pointed out that, whether stones were present or not, infection was in very many cases of cholecystitis deeply implanted in the wall of the gall-bladder itself—established the procedure of complete removal as a necessary operation.

Lund, of Boston, U.S.A., was among the first to advocate cholecystectomy in selected cases, but he and his followers met with considerable opposition. It is curious to note that at that time the Mayo Clinic were in the opposite camp, though later the members of that establishment became enthusiastic champions of the removal treatment.

During the war the work has progressed almost to the final stage under the able hands of the Mayos, Lund, Deaver of Philadelphia, and Seelig of St. Louis.

HOSPITAL TREATMENT OF DISCHARGED DISABLED MEN.—In reply to Lord Henry Cavendish-Bentinck, Sir Arthur Griffith-Boscawen, Parliamentary Secretary to the Ministry of Pensions, repeated the information given by Mr. Hodge to Sir Henry Harris, and added that the Ministry of Pensions was taking steps to provide institutions. A large number of beds was available for the neurasthenic, epileptic, and paraplegic, and for advanced cases of tuberculosis. Three orthopædic clinics had been opened in Glasgow for out-patients, and a large number of similar institutions was being established in all parts of the country. In reply to Mr. Richards, on 28th January, Mr. Hodge said that the number of disabled men at present receiving treatment in South Wales and Monmouthshire under conditions entitling them to full allowances was 418, but the total number of men under treatment, including out-patient treatment, would be substantially larger. He was unable to distinguish between those permanently and temporarily disabled. The institutions available for such treatment at present under the direct control of a Department of State in Wales numbered eighty-six, but it was given also in many civil hospitals and institutions. He hoped presently to secure another 500 beds. The South Wales Joint (Disablement) Committee possesssed, under the Naval and Military War Pensions Act, 1915, such functions as might be delegated to it by the constituent local committees, and these functions included that of making arrangements for treatment or training with institutions designed to serve extended areas. It was the policy of the Department to use the Joint Disablement Committees as agents for the provision and maintenance of new institutions. Mr. Hodge added that he understood that these committees got financial assistance, upon which Mr. Hugh Edwards observed that it was not to the amount they had asked for.

ARMY MEDICAL SERVICE IN FRANCE: COMMITTEE OF INQUIRY'S REPORT.—In the House of Commons, at the end of January, Major David Davies asked Mr. Macpherson whether the Committee of Inquiry, presided over by General Sir Francis Howard, had now concluded its labours, and whether it was proposed to give any information to the House in regard to the questions upon which it had reported. Mr. Macpherson said the report had been received, and was now under consideration. He was not in a position to make any statement. Major Chapple asked whether the War Secretary would institute periodic conferences of medical officers representative of the staffs in the various commands in order to discuss matters connected with the efficient and economical administration of medical officers. Mr. Forster replied that there existed already a special machinery for this purpose in the War Office, and this was in close touch with the hospitals and staffs of command and in communication with the Food Controller.

THE VOLUNTARY HOSPITALS: TREATMENT OF DISABLED SAILORS AND SOLDIERS.—The following statement has been issued by the British Hospitals Association:—

The Conference convened by the British Hospitals Association, and held at Westminster Hospital on 19th October, 1917, referred to the Council of the Association the consideration of the question of the treatment of War Pensioners, and in view of the "Instructions and Notes on the Treatment of Disabled Men" issued by the Ministry of Pensions, authorised the Council to negotiate terms with the Ministry of Pensions.

Representatives of the Governors and Staffs of certain large London Hospitals had met and considered this question, and passed some resolutions which were sent to the British Hospitals Association.

At a meeting of the Council held on 14th December, 1917, certain resolutions were agreed, and arrangements made for a Deputation to the Minister of Pensions, which was received on 20th December, when the proposals made on behalf of the Hospitals were considered.

As a result of the discussion between the deputation and the Ministry of Pensions, it was decided that the consideration of certain details should be referred to a Joint Committee of the British Hospitals Association and of the Ministry.

Two meetings of the Joint Committee were held, with the result that the following arrangements were agreed to. These have now been adopted by the Minister of Pensions.

The Ministry are only empowered to provide treatment for men disabled by reason of service in the present war, and for these men only so far as their disablement, or any incapacity connected with it, necessitates medical attention after discharge.

J. COURTNEY BUCHANAN,
CONRAD W. THIES,
24th January, 1918. *Hon. Secretaries.*

Memorandum of the Arrangements agreed by the Joint Committee of the British Hospitals Association and the Ministry of Pensions, for the treatment of Disabled Sailors and Soldiers, sent to Civil Hospitals by, or on behalf of, the Ministry of Pensions.

1. That the Voluntary Hospitals which undertake the work will examine and, if found suitable, treat all Disabled Sailors and Soldiers sent to them by any Local War Pensions Committee on the recommendation of a medical Referee or a Medical Board, or other Medical Officer appointed by the Ministry of Pensions.

It will rest with the authorities of the Hospital to decide, after examination of the man, whether they can accept the patient for treatment and whether he should be treated as an In- or Out-patient.

2. It is understood that if there is any difference of opinion as to the suitability of the case for treatment in the Hospital, from whatever cause this disagreement may arise, the Hospital Authority or Medical Officer of the Hospital will communicate at once with the Medical Referee, with the Local War Pensions

Committee, or with the Medical Officer of the Ministry of Pensions who may have sent the case to the Hospital, stating the grounds of objection and suggesting also the treatment advised.

3. *In-patient treatment.*—That a minimum of 5s. per day will be paid by the Ministry of Pensions for all such cases as are admitted for In-patient treatment on the understanding that in the case of any Hospital which can show on good evidence that the cost of treatment is reasonably higher in that Hospital a higher charge may be agreed with the Ministry of Pensions up to a maximum of 7s. per day.

Note.—It was agreed on this point that Hospitals which have no resident staff will not be allowed more than 5s. per day. Only Hospitals which are fully equipped, and contain Bacteriological, Massage, *x*-ray and other special departments, will be eligible for the maximum rate of 7s. per day on the basis of the actual evidence produced in support of their claim.

4. *Out-patient treatment.*—That in the case of Hospitals which are paid a flat rate of 5s. for In-patient treatment, the normal rate for Out-patients shall be 1s. per attendance. In those Hospitals in which the flat rate for In-patients is 6s. or over, the rate for Out-patients shall be 2s. per attendance.

Note.—The foregoing terms in Clauses 3 and 4 do not preclude any arrangement by which the cost of the treatment is defrayed at a composition rate per case, in place of payment per day, for In-patients, or per attendance for Out-patients, if such arrangement should be more convenient.

5. That these charges as agreed to by the Ministry of Pensions be made to the Hospitals, and that they cover all costs including any allowances made by the Hospital in recognition of Medical Services.

6. That the Authorities of the Hospital undertake to keep an accurate record of the attendance and treatment of disabled men, to notify the Local War Pensions Committee of the admission and discharge and Out-patient attendance of all patients sent by them or by the Ministry of Pensions, and to furnish a certificate at the conclusion of treatment, stating on medical opinion:

(1) The general condition of the patient;

(2) Whether or not he needs further treatment which the

Hospital is not in a position to give; and, if so, what kind of treatment, *e.g.*, Convalescent.

The foregoing notifications and certificates to be covered by the inclusive capitation charge made for the attendance and treatment of patients.

7. In cases where the Ministry of Pensions ask for a detailed Specialist Report, whether on Form B. 179 or otherwise, a fee of 21s. will be paid. It is understood that neither the Medical Referees nor the Local War Pensions Committees are entitled to call for such a Report from Hospitals; but that if in any case such Report is considered necessary, the Local Committee, having first consulted the Medical Referee, must obtain the authority of the Ministry of Pensions.

In future, where the Hospital is asked for a Report by a Local Committee without such authority, the request should be returned to the Committee with an intimation that the case should be sent, in the first instance, to the Medical Referee. It should not be necessary for Local Committees to require the kind of detailed Report for which the special fee in question is payable; but it will be considered whether there are any classes of case for which such reports might properly be required by them.

8. Where a disabled man is admitted for treatment as an emergency case without authority from the Local War Pensions Committee, or the Ministry of Pensions, the Hospital shall communicate without delay with the Local Committee, stating the disease for which treatment is required, with a view to ascertaining whether the case is one in which the charges in paragraphs 3 and 4 above can be made; and where in such case responsibility is accepted by the Local Committee payment of all charges shall date back to the date of the admission of the patient.

9. On the question of securing priority of treatment, or making special arrangements for discharged disabled men, it was agreed that:

(*a*) For In-patient treatment it might be possible for some Hospitals to give preference to a limited number of cases of discharged disabled men, always on the understanding that the general principle of giving priority to urgent cases of whatever class be not departed from.

(*b*) With regard to Out-patient treatment, it should be possible to arrange priority of treatment for disabled men during specific hours within the ordinary hours of attendance at the Hospital or by allotting certain hours outside the ordinary hours of attendance or otherwise as might be found practicable.

10. On the question of the responsibility of the Hospitals to the Ministry in regard to treatment given by them, it was agreed that, as in the parallel cases of the treatment of venereal diseases and tuberculosis, no objection is raised on the part of the Hospitals to inspection by an officer of the staff of the Ministry or an officer deputed by the Minister for the purpose, provided that this carries with it no interference on the part of the Inspector with the Hospital administration or medical treatment.

11. These arrangements will remain in force for one year, but either party may call for reconsideration of the terms at the end of nine months.

LITERARY INTELLIGENCE.—New and enlarged editions of Treves' and Keith's *Surgical Applied Anatomy* and Candy's *Manual of Physics* are announced for early publication by Messrs. Cassell & Co., Limited. *Surgical Applied Anatomy* has been revised by Professor Keith, assisted by Dr. W. Colin Mackenzie; the *Manual of Physics* by Mr. Candy.

NEW PREPARATIONS, &c.

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Vitamogen, it is claimed, represents a highly concentrated food for invalids, convalescents, and delicate children, rich in vitamines containing organic phosphorus with proteins, carbohydrates, and other food necessary for growth and nutrition. It is a yellowish powder, easily soluble in cold water, and quite palatable. The vitamines and the phosphoric acid present in its composition should make it a valuable food in selected cases.

REVIEWS.

Otosclerosis (Idiopathic Degenerative Deafness). By Albert A. Gray, M.D., F.R.S.E. London: H. K. Lewis & Co., Limited. 1917. (12s. 6d. net.)

In studying the problem of otosclerosis, which Gray rightly describes as both mysterious and fascinating, two essentials are required—the spirit of research and intellectual patience. Those of us who are acquainted with the author's previous and beautiful work on the histology of the ear recognise that he possesses these two in an exceptional degree. Indeed, the mere perusal of the method of preparation of the specimens of the labyrinth which he uses fills us with admiration. Truly "Ars longa sed vita brevis," and how long the art of aural research is, is brought out strongly in the present work.

We are, of course, specially interested in the part which deals with the pathology of otosclerosis. The plates are most instructive. Perhaps it might be urged that it is unfortunate that three at any rate of the cases examined died of long-standing wasting disease. Many questions arise to our mind in examining the plates, but we are constrained to agree—as, indeed, we have always held—that whatever the cause of the condition may be it is not inflammatory. We think, indeed, that Gray is right in describing it as degenerative pure and simple, and we have no doubt that the tendency to degeneration is inherent, as he says, and is specially so in the ear, because of the recent appearance of the auditory apparatus in a developmental sense, and (this is a strong point) the vestibular apparatus is usually unaffected (except, it must be admitted, after a long period) because of its stability from its earlier origin. No other theory so well explains the conditions found in the labyrinth as this. At the same time we should be unwilling to drop the name "otosclerosis," and adopt the ugly and, we think, unscientific title "idiopathic degenerative deafness" which the author suggests.

While we agree that Gray's theory of the origin of otosclerosis is most probable, we do not think that all the difficulties connected with the condition are solved. Indeed, the author himself recognises this. For instance, if we take the first case, the pathological changes in the labyrinth, as far as our present means of examination go, are not sufficient to account for the clinical facts, the decrease of hearing, the tuning-fork reactions, the loss of hearing for certain notes. In fact, we should go so far as to doubt that a diagnosis of otosclerosis was justified. There was no fixation of the stapes, and yet the clinical examination suggested that it was present. We agree that in all probability there are always changes in the auditory nerve, peripherally and probably centrally too, which are at present unrecognisable, though this is disconcerting in relation to the accepted significance of the tuning-fork tests. It will thus be seen that though Gray's work clarifies our knowledge of the condition, it at the same time opens up fresh difficulties. Probably he has examined the labyrinths of cases in which a diagnosis of otosclerosis had been made during life, and in which the expected changes were not found. A description and careful study of such cases would be of interest.

The other sections of the work are also well written. The question of the influence of heredity is sanely discussed. We should like if the clinical examination had been fuller, especially in relation to the difficulties which arise in cases where the deafness is due to a mixed cause, as it very often is.

In dealing with the exciting causes we think the author hardly does justice to nasal affections, though we are at one with him in condemning meddlesome nasal surgery. At the same time it cannot be too strongly pressed that in this, as in all aural affections, the examination is not complete till the nose and nasal accessory cavities have been thoroughly examined, and in otosclerosis we would specially emphasise the examination of the accessory cavities.

In regard to treatment, Gray insists on the importance of a careful general examination, and we are glad to see that he is not unduly pessimistic.

The author's world-wide reputation as a skilled histologist in relation to the ear ensures for this work a most cordial reception by all English-speaking (or reading) otologists, and we shall not be surprised to hear that it has been translated into other languages. It has been a pleasure to review it. It does credit not only to the author but also (and this is where the reviewer comes in) to British otology.

The Intensive Treatment of Syphilis and Locomotor Ataxia by Aachen Methods. By REGINALD HAYES, M.R.C.S. Second Edition, Revised. London: Baillière, Tindall & Cox. 1917. (3s. 6d. net.)

THIS is the second edition of a work which was favourably reviewed in these pages on its first appearance, and we have little to add to the commendation then expressed. Mr. Hayes has thoroughly revised it, and added some figures illustrative of the proper methods of mercurial inunction. He does not in any way decry the use of salvarsan, and, indeed, is a strong advocate of the combined method of treatment, but he has done a real service in redirecting attention to the potent influence of inunction, properly applied, at a time when this valuable measure stands in some danger of being overshadowed by the later drug.

Sanitation in War. By Major P. S. LELEAN, C.B., F.R.C.S., R.A.M.C. With Introduction by Sir ALFRED KEOGH, K.C.B., M.D. With 54 Illustrations. Second edition. London: J. & A. Churchill. 1917. (6s. net.)

IN our notice of the first edition of this excellent little work (*Glasgow Medical Journal*, vol. lxxxv., p. 61) we drew attention to its eminent usefulness to the medical officer in the field. That our opinion has largely been shared by others is evident from the appearance of a second edition after so short an interval.

The present volume is by no means a mere reprint of its predecessor. The chapter on the "*Rôle* of insects in war" contains a great deal of new matter in the section on antimuscid measures. This to the medical officer is an important subject, and we know from personal observation how, by strict attention to these measures, the plague of flies is being so ably combated in Palestine.

Another new feature is the detailed account of the functions and organisation of "Sanitary sections," and yet another is the points requiring attention from regimental medical officers.

The chapter on field conservancy has been expanded to keep pace with the evolution of new methods during the war.

As in the first edition, the author is generous in his references to helpers, and modest with regard to himself.

The new edition is slightly more bulky than the original, but it remains of pocket size, and therefore a most suitable companion for a campaign. The author merits the thanks of fresh generations of medical officers, in addition to the gratitude of those who have derived help from the former edition.

As regards the popularity which this little volume is sure to enjoy, it is not only beyond question, it is deserved.

Nerve Wounds. By J. TINEL, Ancien Chef de Clinique et de Laboratoire de la Salpetriere. Translated by FRED ROTHWELL, B.A.Lond. Edited by CECIL A. JOLL, M.B.Lond., F.R.C.S.Eng. London: Baillière, Tindall & Cox. 1917. (15s. net.)

THE author in the first part of this work gives a full and lucid description of the general changes that take place as the result of nerve injuries of various degrees of severity, and the methods of examination to be followed in order to ascertain the degree of injury the nerve has sustained. He states that the most important and difficult problem to solve in peripheral paralysis is that of the nature of the lesions, and he describes in detail four syndromes that are typical and clearly characteristic, namely, syndromes of (*a*) interruption, (*b*) compression, (*c*) irritation, and (*d*) regeneration.

The greater part of the book is devoted to the symptoms produced by these four syndromes, as they present themselves after injury to the principal nerves of the upper and lower limbs. There is a useful chapter on treatment, though the author has evidently not had much experience of injection of alcohol into nerves, and one may question the value of denudation of the arteries, and resection of the perivascular sympathetic plexus as a method of treating neuralgias.

This book has been written as the result of the experience of nerve injuries observed in military hospitals, but it should appeal to all hospital surgeons, as it contains "fundamental principles which should be known to all." The illustrations are a feature, and add greatly to the value of the text.

The Organs of Internal Secretion: Their Diseases and Therapeutic Application. By IVO GEIKIE COBB, M.D., M.R.C.S. London: Baillière, Tindall & Cox. 1917. (5s. net.)

IN all essentials this volume consists of a series of articles which appeared in the *Medical Press and Circular* in the summer and autumn of 1916. They have undergone slight alterations to fit them for presentation in book form, but otherwise remain substantially the same as when their serial publication earned them widespread interest and approval. Dr. Cobb has been very successful in giving in condensed form an account of the diseases of the ductless glands and of the therapeutic application of their extracts, an account which is at once readable and accurate, and enables the practitioner to obtain for himself, with a comparatively small expenditure of time, information and therapeutic hints which he might otherwise have to search for in many different places, or which he might have to extract from the many details of exhaustive laboratory reports. After a brief introduction the first four chapters are given to the thyroid gland, and then follow chapters devoted severally to the pituitary body, the adrenals, the pancreas, the sexual glands, and the internal secretions of digestion, the volume closing with a chapter on the therapeutic application of hormones, and with a brief discussion of the present position of organo-therapy in medicine. This allocation of space may perhaps be taken as a measure of the degree of certainty with which we handle the various extracts, our use of thyroid substance being far more definitely purposive and based on far more certain knowledge than is the case with any of the other glands. Indeed, although most of Dr. Cobb's writing is clear and logical, and although he generally gives adequate reasons for the faith that is in him, he sometimes betrays his uncertainty in such statements as that regarding hormotone, a preparation containing the extracts of many glands:—"It is claimed that its exhibition is followed by marked benefit in many indefinite conditions." There is still, unfortunately, a good deal of this hit-or-miss therapeutics in connection with ductless gland extracts; but the whole subject is as yet in an early stage of its development, and Dr. Cobb's book is valuable as giving a connected, if somewhat over-enthusiastic, account of its present position.

War-Shock: The Psycho-Neuroses in War, Psychology and Treatment. By M. D. EDER, B.Sc., M.R.C.S., L.R.C.P. London: William Heinemann. 1917. (5s. net.)

MR. EDER bases his book upon the study of the first hundred consecutive cases of psycho-neurosis which came under his care at first in general medical and surgical wards, and later in the special department of which he had charge in Malta. He opens with an introduction defining his terms, in which he states that war-shock is a psycho-neurosis "produced by stress of external conditions, acting on a mind which is but a degree or so more sensitive than the normal person's," and that the term has therefore a considerably wider application than shell-shock. Fifty-three of his cases, indeed, occurred without previous injury or shell-shock, only nineteen were associated with shell-shock, and the remainder followed injury. The condition of which he treats is in fact covered by the terms hysteria and psychasthenia, but in the great majority of the cases (seventy) there was no pre-war history, either family or personal, of nervous or psycho-neurotic taint; and the men were often among the very best. His two next chapters deal with the clinical manifestations and psychological mechanism of conversion-hysteria (hysteria in which somatic disturbance is the prominent feature), the next with anxiety-hysteria (in which the psychical elements are most conspicuous), and the fifth with psychasthenia. The remainder of the book is occupied with diagnosis and treatment. A disciple of Freud and Jung, his treatment, mainly hypnotic suggestion, has been based upon psycho-analysis, which, however, was fully carried out in only a few cases, as the necessities of military service did not permit the majority of patients to remain long enough in Malta. Of the hundred cases, seventy-nine were treated by hypnosis; seventy of these were cured, seven improved, and only two showed no change. The other methods employed were non-hypnotic suggestion, suggestion under an anæsthetic, and psycho-analysis. The time spent in treatment was at the most four weeks, and but few cases required more than two weeks' treatment. Of the seventy cases without previous history 91·5 per cent were cured, and 8·5 per cent improved, while in the rest the figures were not so favourable (62 per cent cured, 27·6 improved, and 10·4 unchanged). These results indicate that psycho-therapy ought to be the chief means of treatment in cases of war-shock. The claim is of course tacitly acknowledged by everyone who makes use, however unconsciously, of suggestion in the shape of a few cheering words, but it is perhaps not generally enough realised that the force of such suggestion can be greatly increased by a knowledge of psycho-therapeutic methods. Mr. Eder's little book should contribute largely to their wider study.

Rivers as Sources of Water-Supply. By ALEX. CRUIKSHANK HOUSTON, M.B., D.Sc., F.R.S.Ed. London: John Bale, Sons & Danielsson, Limited. 1917. (5s. net.)

THIS book contains the substance of the lectures delivered by the author at the Royal Institute of Public Health in 1916, with the addition of a special chapter on water sterilisation. It deals almost exclusively with the water-supply of London, a subject on which Dr. Houston is entitled to speak with the highest authority in his capacity of Director of Water Examinations to the Metropolitan Water Board. The work embraces an exhaustive account of the sources of water-supply to London and the London area, dealing with the topography and geology of the Thames area, the flow of the river, the rainfall and barometric pressure of the area for the twenty-year period, 1891-1910, and the quality of the water of the river itself for the period 1906-1913, as affected by rainfall and drought within these years of observation. The results of observations show that—the flow of the Thames tends to be highest in February and lowest in September; the rainfall to be highest in the Thames Valley in October and lowest in April; that in the period 1906-1913 the rainfall was heaviest in October and December, and the largest flow in December and January of each of these years; that there is a "lag" of some months between the flow in the river and the fall of rain in the valley, due to the immense underground storage capacity of the strata composing the Thames basin; that wet years tend to be years of heavy flow, and the quality of the river water to suffer in consequence; that in these circumstances the deterioration in quality is due to the floods washing into the river various kinds of pollutions; that the chemical and bacteriological examinations generally correspond with the flow, but that towards the end of the year the river water deteriorates in quality more rapidly than the flow increases, and improvement in quality in the spring occurs more quickly than does the decline in the flow. The supply of water to London and surrounding area averages about 244 million gallons per day, of which about 80 per cent comes from the Thames and the Lee (60 per cent from the former and 20 per cent from the latter), the remaining 20 per cent being obtained from deep and Artesian wells.

An interesting chapter deals with the water of the Thames in relation to pathogenic bacteria. In the search for streptococci, *B. typhosus*, and Gaertner's bacillus in this water, an enormous amount of experimental work has been overtaken. Respecting the presence of streptococci which are lactose positive, he notes that out of 52 samples of water examined during 1909, in only 13 were positive results found, the total number of organisms isolated being 19, whereas when one part of excremental matter is added to one million parts of sterile water, the average yield of this organism is about 17 per c.c. On this arithmetical ratio, it may be inferred that Thames water does not contain one part of *fresh* excremental matter in over 22 million parts. With respect to the presence of *B. typhosus* and Gaertner's bacillus, an exhaustive examination of a very large number of river water samples showed that not one of them contained the first-named organism. From this examination the author says that it may fairly be claimed that by dint of great labour it is possible to isolate both of these organisms from river water if and when they are present in the proportion of one organism per 9 c.c., and one per 19 c.c. respectively.

Another interesting subject in water purification discussed is that of the *filterability* or filtration-resisting power of a water, and the composition and microscopic appearances of the matters arrested thereby. By resistance to filtration is meant the measure or degree in which suspended matters, living or dead, organic or inorganic, in a water interfere with its passage through filtering material by blocking the filter. It appears regarding Thames water, that while there is relatively greater resistance to filtration in the spring of the year due to the presence of algal and other growths, and in the winter to suspended matter in the flood water, during the summer months the resistance is very small, and, speaking generally of the river water, it cannot be said to exercise any serious blocking effect on filters.

One of the most interesting experimental researches considered is that with regard to the longevity of *B. typhosus* in Thames water. The experimental investigation consisted of the addition of approximately known numbers of (*a*) culturised and (*b*) unculturised or natural organisms to the raw water of the river, and thereafter storing the infected samples for periods of time of varying length. The results demonstrated that notwithstanding the number added was usually enormous, there was a large reduction in number at the end of one week's storage, a further reduction to less than 10 organisms per c.c. at the end of three weeks, but that complete disappearance was only effected after from five to nine weeks' storage. These observations apply to the use of culturised organisms. When, on the other hand, non-cultured or natural organisms were employed, the organisms were commonly found dead within the first week of storage, or in rarer instances either in the second or third week. These facts indicate that this organism, as shed from the human body, cannot survive so long in water as the same organisms cultured in the laboratory, a matter of considerable importance in its practical bearing.

The author corroborates by personal experiment and observation the valuable results obtainable from combined storage and filtration in the purification of a water; indeed he goes the length of declaring that these measures in combination will, when properly used, effect purification sufficient to render the water potable even in very polluted rivers. The purifying influence of storage alone is very considerable. It has to be borne in mind, however, that storage may contribute to the increase of algal and other minute forms of vegetable life, and that the causes contributive of this result are not infrequently elusive to search. He gives examples in the case of different reservoirs of the London supply, where the source of supply in each case is the same. Moreover, the presence of these algal growths generates on occasion objectionable tastes in the water. It is, therefore, well that the flora of a water should be known, so that any departure from the normal may readily be detected. The book contains a series of excellent micro-photographic reproductions of various typical algal forms. As an example of the purifying effects of combined storage and filtration on Thames water, the author states that whereas raw water of the river gives a gelatin count of 2,900 organisms per c.c., an agar count of 248 per c.c., and a bile-salt count of 28, after both storage and filtration have done their work, the gelatin figure falls to 14·8 per c.c., the agar figure to 2·8 per c.c., and the bile-salt count to 0·5 per c.c., the amount of purification amounting, therefore, to about 99 per cent reduction over all; besides, the filtered water contains more than a thousand times fewer *B. coli* than the raw water.

A special chapter is devoted to the subject of sterilisation of water, by which is meant, of course, the relative destruction of live organisms but not of spores. The methods of sterilisation discussed are (1) the excess lime method; (2) the use of hypochlorites; and (3) liquid chlorine. Other methods are merely named. The first method is one suggested and favoured by the author. It depends on the addition of lime, either as milk of lime or lime water, in amount more than sufficient to combine with the dissolved CO_2 and the bicarbonates. It is in use in the Aberdeen supply from the Dee, and the amount of lime there required is 1 lb. per 10,000 gallons, or about one part of CaO per 100,000 parts of water, relative sterilisation being achieved within seven days. Dr. Houston is of opinion that an excess-limed but unfiltered water is safer for potable purposes than a filtered but non-limed water. The use of hypochlorites, in the form of an alkaline solution of sodium hypochlorite, was made for the Lincoln water-supply, and had been in use from 1905 to 1911. In later days calcium hypochlorite or bleaching powder has gained favour especially for army purposes in the field. The author thinks that the knowledge that chemicals are added to drinking water is repugnant to many people, and that this is a factor not to be ignored. Besides, such addition does contribute a taste normally foreign to a water when the amount of hypochlorite added is not finely adjusted. But while consideration ought always to be given to these points, it is certainly of greater importance, especially to an army in the field, and not less perhaps to the civil population of a town, that a potable water should be rendered innocuous even although a fastidious palate may detect an unusual taste.

The advantages, so far as the public health is concerned, far outweigh the disadvantages. Organisms of possible water-borne diseases are devitalised or destroyed, the treated water is therefore harmless, and it may be rendered tasteless and odourless; and absolute protection against water-borne disease is conferred. Longer experience in the use of this purifying agent will, doubtless, tend to perfect its employment relative to any given water, but in the meantime too much reliance must not be placed on the blue colour reaction after the application of the potassium iodide and starch solution as an infallible evidence of sterilisation, for the colour may be present one hour after the test has been applied, and yet the water is not sterilised, as proved by bacteriological methods.

With the same object of sterilisation in view, liquid chlorine has been employed, although as yet chiefly in the United States of America. The claim for its preferential use is that its action is very rapid, if not, indeed, instantaneous. This, however, has been doubted. However the question may develop in civil life, there cannot be any question that, of all the chemical methods which have been suggested for the rapid sterilisation of water for the use of armies in the field, those which have a chlorine basis are the most effective when properly used.

This work deserves the close study of all who are interested in the subject of water-supply and water purification, coming as it does from the pen of a master of the subject.

Dangers in Neck-Wear. By WALTER G. WALFORD, M.D. London: H. K. Lewis & Co., Limited. 1917. (4s. 6d. net.)

DR. WALFORD directs attention in this little volume to the evil effects that may follow the continued use of tight neck-wear, whether in the shape of high collars, the velvet or other bands which women love, or even a too narrow aperture to the shirt or underclothing. The obvious result is cerebral congestion, and he shows that from its effects upon the nervous centres interference with the heart's action and a host of intrathoracic disorders may follow. There is no doubt that constriction about the neck must be responsible for many evils, but his enthusiasm leads him to overstate his case, and when we find that the insanity of George III. is attributed primarily to a tight stock, the author ignoring all the sane persons who wore at that time a similar impediment, we hesitate to accept from one with so little sense of evidence statements to which we might otherwise be disposed to give credence.

Hygiene and Public Health. By LOUIS C. PARKES, M.D., D.P.H.Lond. Univ., and HENRY R. KENWOOD, M.B., D.P.H. Lond. London: H. K. Lewis & Co., Limited. 1917. (14s. net.)

THE work has now attained its sixth edition. Earlier editions have been reviewed in these pages on previous occasions, and it is not necessary to do more now, perhaps, than to indicate wherein this differs from former editions. While the whole work has been revised, a new chapter has been added on maternity and child welfare work, amplification has been made of the subjects of personal hygiene, camp sanitation, and communicable diseases, and a note on marine hygiene has been inserted. These alterations and additions have somewhat, although not greatly, enlarged the book which now consists of 774 pages plus 13 pages of index.

In going through the present edition, however, one notices here and there a point worthy of attention. On p. 39, for example, we read that "the Loch Katrine water acts most powerfully on lead, and yet no symptoms of lead-poisoning have ever been observed amongst the population of Glasgow." We demur to this statement put in these words, since it is not expressive of the whole truth; it is, in fact, the kind of statement which was made before a Parliamentary Committee when the first Bill for the introduction of Loch Katrine into Glasgow was under consideration, and which, moreover, helped to throw out the Bill. The foregoing statement is only correct in respect that Loch Katrine water will and does act powerfully on *bright untarnished* lead surfaces, but it is not correct in its inference that that water acts powerfully on any kind of lead surface. It can easily be proved by experiment that it does not act upon the usual tarnished or oxidised surface of lead, otherwise it would be nothing short of a miracle that the citizens of Glasgow should escape lead-poisoning, The reason, moreover, why this water acts upon bright lead surfaces is its high oxygenated condition, and any similar water will similarly act upon lead. It does not possess any acid reaction, which is the common cause of plumbo-solvent power. Jealous as we are of the fair fame of Loch Katrine water, we think that in a future edition the foregoing statement should be rectified in the direction indicated.

In the chapter on communicable diseases we are pleased to observe that the authors do not subscribe unreservedly to the extreme views of certain writers regarding the distances to which small-pox infection from hospitals may be transmitted aerially. It is difficult—we think, impossible—to burden small-pox hospitals solely with the blame of transmission of the disease to inhabitants of their environment, in view of the several mediate modes or channels which exist in connection therewith. From a critical examination of the facts of those small-pox epidemics which have been attributed to aerial transmission, we have personally not been able to go further than hold the case against the hospital of itself to be not proved. Whilst saying this, however, we believe that the increased zone of separation of small-pox hospital buildings from the nearest public thoroughfare required by the Local Government Board is a safe preventive precaution.

On the question of vaccination in infancy as a preventive against small-pox, the authors are of opinion "that it would be very unwise in the present state of our knowledge to discard a prophylactic measure, which may be in many respects defective, but is still better than no prophylaxis at all." This seems to be a comparatively colourless opinion. Vaccination, when properly performed, has been proved beyond dispute to be an effective preventive measure. Any fault, therefore, as to its ineffectiveness must lie largely at the door of the medical profession and to our former want of knowledge of what constitutes efficient vaccination. That, however, is of much less importance than the fact that the law of this country permits a parent who declares a conscientious objection to the vaccination of his child to prevent the vaccination to be done. Consequently the statement of the authors, which is well-founded, that "more than half the children now born in England escape vaccination altogether," coupled with our knowledge that a considerable proportion of children in Scotland also escape, should evoke considerable public concern, not merely on the ground that such proportional numbers were not anticipated when the law as to conscientious objection was passed, but with relation to the future. It may not be profitable to prophesy as to the future, but we have grave misgivings with regard to future outbreaks of small-pox and their results.

The authors also very properly draw attention on p. 657 to new methods of disinfection required in cases of carriers of diseases where the organisms are chiefly located in the upper air passages. In view of the infective condition of these tracts, it would almost seem that the time has arrived that in an infectious diseases hospital particularly, and probably also in a general hospital, a room will have to be provided and fitted as an *inhalatorium*, the atmosphere of which would be charged with suitable and effective disinfectant vapours. This, we believe, might limit in some degree the numbers of "return" cases in scarlet fever and diphtheria, and would be the only suitable form of treatment of "carriers" of the cerebro-spinal meningitis organism and others.

We commend the chapter on sanitary law and administration for its orderly treatment and completeness of information. It has the appearance, however, of being crowded because of being printed in smaller type than the rest of the text of the book.

The book is illustrated by 89 figures, a few of which, however, are not so effective for their purpose as they might be.

Viewing the book in its entirety, we consider it to be a sound piece of work whose high quality is well sustained from commencement to finish, a reliable source of information to the student, and a valuable guide to the practitioner and worker in the service of the public health.

The Journal of Hygiene. Plague Supplement V. Tenth Report on Plague Investigations in India. Cambridge: University Press. May, 1917.

THIS part of the Report on Plague Investigations in India deals with (1) epidemiological observations in the United Provinces of Agra and Oudh in 1911-12, and (2) the influence of saturation deficiency and of temperature on the course of epidemic plague, both parts of the subject being illustrated by charts, and the first also by maps. The writers of the first paper point out that in the provinces above-named there are four natural geographical sub-divisions, viz., (1) the Himalayan Tract, which has been almost free from plague; (2) the sub-Himalayan tract, which has had very little plague; (3) the great Indo-Gangetic Plain, which has suffered very severely from plague; and (4) the hill system of Central India, which has experienced very little plague.

The climate of these Provinces generally may be thus summarised:—The mean daily temperature during the winter months varies between 72° F. and 57° F., the season being dry; rain falls irregularly, associated with storm movements; in spring the temperature rises gradually and by May intensely hot weather prevails; in June monsoon currents reduce the heat. But there are marked local variations in the four tracts mentioned. In (1) the weather is cold in winter, cool in spring, with heavy rainfall in the summer months; in (2) the rainfall is heavy in the monsoon, and the subsoil level of water is high; in (3) the climate is delightful in winter, becomes hot in late spring, is warm and moist in summer, and in winter the western districts are cooler than the eastern; in (4) the humidity of the atmosphere in winter and spring is low, in the hot weather the temperature is very high, but the winter is not so cold as in other parts of the Provinces.

Among other large populous centres in these Provinces are Cawnpore and Lucknow. Cawnpore has suffered always more persistently and more severely from plague than Lucknow. The authors ascribe this to the fact that Cawnpore is a much larger and more important trade centre than Lucknow, is therefore exposed to greater risk of infection, is a more rat-infested city, contains large grain stores which harbour these animals, and consequently the number of plague-bearing fleas on rats is greater. The Ballia district has proved to be the most severely infected by plague, having an average death-rate from this disease of 12·5 per 1,000 of population per annum during a given period of time. For the past forty-two years this district has had an average rainfall of 41·82 inches. During the hot weather the temperature is relatively lower and the humidity higher than in Cawnpore, Lucknow, or other populous centres within the Provinces, these being the conditions favourable for the spread of plague. The writers are of opinion that the association of unusual humidity during the winter months in certain districts with severe epidemic outbreaks of plague is so constant a phenomenon that they feel justified in concluding that the one stands relatively to the other as cause and effect, and that atmospheric humidity exercises an effect conducive to the longevity and activity of fleas of rats when separated from their host, and thus also to their plague-conveying power. Previous observations respecting the seasonal prevalence of plague had led some observers of the Plague Commission to the conclusion that an epidemic was checked when the mean daily temperature passed above 80° F., and especially when it reached 85° F. to 95° F. Moreover, it had been found that plague bacillus disappears from the stomach of the flea more rapidly during high than at lower temperatures. This conclusion, however, was thought to be too general, as in certain instances epidemic outbreaks tended to decline under presumably favourable conditions of temperature for their continuance. Attention was therefore attracted to the *rôle* of percentage humidity of the air as a more likely intimate factor. Observations indicated, indeed, that humidity had a not unimportant relationship to the seasonal prevalence of the disease, and also to the average number of fleas per rat at different seasons of the year.

Since, however, relative humidity figures of a locality do not afford precise information as to the drying capacity of the air at any temperature in question, it was thought desirable that from a consideration of percentage humidity and temperature records the figures of "saturation deficiency" should be worked out, and that these might afford more useful information. By the expression "saturation deficiency" is meant the difference between the actual tension of aqueous vapour in the atmosphere at a given temperature and the tension of vapour which would be present in a saturated atmosphere at the same temperature. Working from this point of view, the writer of the second paper, after examination of a very large number of collected data associated with plague outbreaks and declensions in India, has reached the following conclusions, viz.:—That when the mean daily temperature rises above 80° F., and when such rise is accompanied by an increase of the saturation deficiency to above 0·30 of an inch, plague cannot maintain itself in epidemic form, though the elevation of temperature of itself may not bring about the termination of an epidemic; that epidemics do not arise, as a rule, when the mean temperature is above 80° F., for the reason that at such a temperature or higher it is quite exceptional to find a sufficiently low saturation deficiency; that in exceptional circumstances, however, with a combination of high temperature and low saturation deficiency, plague epidemics do arise and continue, and it is believed that it is by reason of this unusual combination in Rangoon that plague occurs there at all seasons of the year, and that in Java and Mauritius the disease may occur at all seasons indifferently; and that epidemics are rapidly brought to a termination in the presence of a high saturation deficiency even when the mean temperature throughout the progress and after the termination of an epidemic has been considerably below 80° F.

We reckon these contributions to the meteorological etiology of plague as being most worthy the attention of those interested in tropical diseases, in respect that they break new ground.

Clinical Methods. By ROBERT HUTCHISON, M.D., F.R.C.P., and HARRY RAINY, M.D., F.R.C.P.Ed., F.R.S.E. Sixth Edition. London: Cassell & Co., Limited. 1916. (10s. 6d. net.)

THE chief features in which the present differs from former editions of this well-known and admirable manual are the changes in the chapter on clinical bacteriology, revised, as hitherto, by Professor Ritchie, the inclusion of a summary of the results of modern methods of examination of the myocardium, and the alternative use of the newer anatomical terminology of the Basle Nomenclature. The book has in all respects been brought thoroughly up to date, the only omission among more recent tests which the reviewer has noted being the absence of any mention of the Wolff-Junghans and Salomon's reactions, and the present edition can only increase its popularity. It is needless to say more of a book already so widely and justly appreciated.

Histology of Medicinal Plants. By WILLIAM MANSFIELD, A.M., Phar.D. First Edition. New York: John Wiley & Sons, Inc. 1916. (13s. 6d. net.)

THIS book is intended, as the author tells us in the preface, "to provide a practical scientific course in vegetable histology for the use of teachers and students in schools and colleges," and he explains that "the medicinal plants are studied in great detail because they constitute one of the most important groups of economic plants." The opening part of the work is taken up with descriptions of the various forms of magnifying apparatus, the use of the microscopes and the mounting of specimens. The second part is devoted to tissue cells and cell contents, and this part is very richly and beautifully illustrated by plates. The third part treats of the histology of roots, rhizomes, stems, bark, woods, flowers, fruits, and seeds. Like the other parts it is well illustrated. All the illustrations are from original drawings made by the author, and they do him credit; they will be a source of much pleasure to the student of botany. The author has had a large experience as a teacher and he has also acquired a wide practical acquaintance with his subject from the commercial side as examiner of powdered drugs for a large importing and exporting firm. His descriptions are clear, and he presents his information in an interesting manner. It is out of place to attempt here a detailed review of the contents of the book, but it may be said in passing that the section on vegetable *hairs* will be found very interesting and worthy of study. The work should prove welcome alike to students of botany and students of pharmacology. The volume is full of interesting matter and is well got up, and does credit both to author and publisher.

A Laboratory Manual of Organic Chemistry for Medical Students. By M. STEEL, PH.D. London: Chapman & Hall. 1917. (6s. net.)

THIS book is essentially a laboratory guide. No explanations of any of the experiments or results are given; the student is expected to correlate the facts observed with the theoretical matter taught in the lecture room or found in books. The book, therefore, has a strictly limited use. The scope covered is very similar to that of other books of the same class; it is somewhat weaker on the biological side than some of the books commonly used in this country. The only section in which it is fuller is that on the chemistry of the alkaloids of medical importance. The methods and details given are, however, concise and clear; an excellent point is made in giving for nearly every experiment the definite quantities of chemicals to be used. The book is provided with a good index.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

Tropical Diseases in the Balkans. By Aldo Castellani, Royal Italian Medical Service (*Proc. Roy. Soc. Med.*, 12th June, 1917).—The author refers to the appalling number of cases of malaria, and the frequency of the pernicious type throughout the Adriatic and Balkanic zones during 1915-1916. He also refers to the protean nature of the disease. Some cases resembled scurvy, as in an outbreak near Skopolje, in September, 1915. The patients were pale and weak; had pains in the loins and limbs, and indurated swellings due to large extravasations of blood; bleeding from the gums and nose and, in two cases, from the stomach and intestine, in one from the lungs and bronchi, and in another from the kidneys and bladder. None had fever, but the presence of a large indurated spleen in two of the cases suggested malaria. The parasite was found, but only in 10 per cent of the cases. Under quinine the symptoms disappeared in from three to six weeks. Calcium lactate was found unnecessary.

Other cases closely resemble pernicious anæmia. A type of malarial polyneuritis resembles wet beri-beri. The comatose type was quite common; *post-mortem* examination of the brain of one of these cases revealed enormous numbers of malarial parasites in the capillaries. Another type resembles delirium tremens. Other types referred to are the cerebro-spinal, the hemiplegic and monoplegic, and the spinal. Cases also may exhibit mental symptoms.

The author next refers to cases of malaria simulating specific infections. The typhoid-like type was common. The onset was slow, the patient apathetic and complained of headache, tongue coated, fever continuous or subcontinuous, abdomen tumid, spleen generally palpable but not large or hard. The blood showed generally numerous ring forms, and quinine in large doses had no influence for a long time either on the fever or on the parasites. The bacteriological examinations for typhoid and paratyphoid germs were generally negative; very occasionally a case of mixed infection was found.

The undulant type of malaria is extremely rare, but exists. The fever yielded to quinine intramuscularly. The author also describes cases resembling Weil's disease, tetanus, hydrophobia, and, lastly, sleeping sickness. Many cases simulate diseases of the digestive system, namely, carcinoma ventriculi, pseudo-dysentery, pseudo-cholera, cholecystitis, abscess of the liver, cirrhosis of the liver, acute hæmorrhagic pancreatitis, appendicitis, and peritonitis. Other cases simulate diseases of the respiratory, circulatory, uro-genital systems, and also diseases of the skin.

With regard to diagnosis, he emphasises the great importance, in the Balkanic zone, in every case of keeping in mind the importance of malaria; of the necessity of repeated examinations of the blood; of remembering that quinine does not always influence the fever in malaria; and, lastly, of the importance of careful clinical examinations.

Prognosis is generally good, but recurrences are frequent.

Treatment by large doses of quinine is advocated, 30 to 60 grains or more daily. In serious cases intramuscularly; intravenously in pernicious forms. Other drugs given in association or alternately are picric acid, methylene blue, antimony, arsenic and atoxyl, salvarsan, &c. A useful mixture is—

℞.—Quin. sulph., . , .		10 gr.
Acidi sulph. dil., . .		10 ♏
Tartar emetic, . . .		$\frac{1}{6}$-$\frac{1}{4}$ gr.
Codein, ...		$\frac{1}{6}$ gr.
Syrup, ...		1 dr.
Aquæ chlorof., . .	to	1 oz.

Three times a day or four-hourly.

In addition, 15 gr. quin. hyd. intramuscularly one day, and next day 1 to 4 ♏ phosphorated oil subcutaneously, and freshly prepared.

In typhus exanthematicus the rash may remain roseolar, and may be scanty or absent. A petechial rash, which he calls the Balkanic rash, caused by innumerable flea bites, might easily be taken for a typhus rash by the inexperienced medical man. Relapsing fever frequently co-exists with typhus, both diseases being carried by the louse. Parotitis, gangrene of the feet, polyarthritis, and neuritis, were common complications. As a prophylactic measure, under-clothing and uniform should be sterilised at regular intervals. The most useful insecticides were, in order of efficiency, kerosene oil and benzene, vaseline, guaiacol, anise preparations, iodoform, lysol, cyllin, carbolic, naphthalene and camphor; for bed-bugs, kerosene oil is best; for lice among troops, the best powder is naphthalene or a menthol powder. Plain vaseline is useful.

In the treatment of relapsing fever he found salvarsan 0·3 grm. intravenously useful in some cases, but disappointing in others; 2 c.c. of a 2 per cent solution of tartar emetic, diluted to 5 c.c., is given along with the salvarsan.

The author concludes with remarks on pappataci fever, dengue, and camp jaundice.—JAMES SCOTT.

Books, Pamphlets, &c., Received.

Manual of Medicine, by Thomas Kirkpatrick Monro, M.A., M.D. Fourth edition. University Series. London: Baillière, Tindall & Cox. 1917. (18s. net.)

Memoranda on Army General Hospital Administration, by Various Authors. Edited by P. Mitchell, M.D.Aberd., Lieut.-Colonel, R.A.M.C. London: Baillière, Tindall & Cox. 1917. (5s. net.)

Human Physiology, by Professor Luigi Luciani. Translated by Frances A. Welby. With a preface by J. N. Langley, F.R.S. In five volumes. Vol. IV: The Sense Organs. Edited by Gordon M. Holmes, M.D. London: Macmillan & Co., Limited. 1917. (21s. net.)

Le Paludisme Macédonien: Caractères Cliniques e tHématologiques, Principes de Therapeutique, par P. Armand-Delille, P. Abrami, G. Paisseau, Henri Lemaire. Préface du Pr. Laveran. Collection Horizon. Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1917. (4 fr.)

Anaphylaxie et Antianaphylaxie, Bases Expérimentales, par A. Besredka. Préface de E. Roux. Paris: Masson et Cie. 1917. (4 fr.)

Lord Lister, by Sir Rickman John Godlee, Bt., K.C.V.O., M.S., F.R.C.S. London: Macmillan & C., Limited. 1917. (18s. net.)

A Short Practice of Midwifery, embodying the Treatment adopted in the Rotunda Hospital, Dublin, by Henry Jellet, B.A., M.D.Dublin University, F.R.C.P.I. With a Preface by Sir W. J. Smyly, M.D., F.R.C.P.I. Seventh edition, revised, twenty-fifth thousand, with 4 coloured plates and 236 illustrations, and an Appendix containing the Statistics of the Hospital for the last twenty-seven years. London: J. & A. Churchill. 1918. (12s. 6d. net.)

Therapeutic Immunisation: Theory and Practice, by W. M. Crofton, M.D. London: J. & A. Churchill. 1918. (7s. 6d. net.)

The Theory and Practice of Massage, by Beatrice M. Goodall-Copestake. With 56 illustrations. London: H. K. Lewis & Co., Limited. 1917. (8s. 6d. net.)

Materia Medica, Pharmacy, Pharmacology, and Therapeutics, by W. Hale White, M.D. Sixteenth edition. London: J. & A. Churchill. 1918. (7s. 6d. net.)

Links with the Past: A Brief Chronicle of the Public Service of a Notable Institution, by A. F. Shepherd. With reproductions from old prints and photographs, and illustrations by E. Coffin. London: The Eagle and British Dominions Insurance Company, Limited.

Marching on Tanga (with General Smuts in East Africa), by Francis Brett Young. With illustrations and map. London: W. Collins, Sons & Co., Limited. 1917. (6s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 26TH JANUARY, 1918.

	Week ending			
	Jan. 5.	Jan. 12.	Jan. 19.	Jan. 26.
Mean temperature, . .	37·7°	32·8°	25·9°	44·1°
Amount of rainfall, . ins.	0·09	0·52	1·68	2·18
Deaths (corrected), . .	329	306	366	356
Death-rates, ...	15·4	14·3	17·1	16·7
Zymotic death-rates, . .	0·7	0·8	0·9	1·0
Pulmonary death-rates, .	4·9	4·1	5·8	5·5
DEATHS—				
Under 1 year, . . .	47	43	50	58
60 years and upwards, .	111	112	138	119
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	3	3	3	8
Scarlet fever, . . .	...	...	...	...
Diphtheria, . . .	3	6	4	2
Whooping-cough, . .	8	7	12	11
Enteric fever, . . .	...	...	1	...
Cerebro-spinal fever, . .	...	1	1	1
Diarrhœa (under 2 years of age),	3	2	3	3
Bronchitis, pneumonia, and pleurisy, . . .	88	68	99	92
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	3	1	2	1
Diphtheria and membranous croup, ...	28	39	25	28
Erysipelas, . . .	11	16	13	24
Scarlet fever, . . .	17	29	24	29
Typhus fever, . . .	...	...	...	1
Enteric fever, . . .	1	2	1	4
Phthisis, ...	29	65	39	49
Puerperal fever, . .	6	3	4	3
Measles,*	29	99	108	79
Ophthalmia neonatorum, .	11	11	5	10

* Measles not notifiable.

SANITARY CHAMBERS.
GLASGOW, 11*th February*, 1918.

THE

GLASGOW MEDICAL JOURNAL.

No. III. March, 1918.

ORIGINAL ARTICLES.

A GENERAL SURVEY OF FIVE YEARS' WORK IN A SANATORIUM.*

By JAMES CROCKET, M.D., D.P.H.,
Medical Superintendent of The Consumption Sanatoria of Scotland and
The Colony of Mercy for Epileptics, Bridge of Weir.

Gentlemen,—I must apologise to you for choosing as my subject to-night "A General Survey of Five Years' Work in a Sanatorium." I am afraid that I chose the subject selfishly. I felt it would be good for myself, having completed a period of five years' work, to survey the past, that I might glean some facts, and group some figures, that might be profitable in future work. When, however, I began the preparation of my address, I saw how impossible it was to deal adequately with the subject in one lecture, how difficult it would be to make it interesting and connected, and how little really new one could add to a subject already well investigated and understood. Were I to choose the title of my lecture again, I would take up the history of tuberculosis, varieties of the disease, methods of diagnosing phthisis, the treatment of pulmonary tuberculosis, or some such topic, any one of which could profitably occupy a lecture period.

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* Read at a meeting of the Glasgow University Medico-Chirurgical Society, 8th February, 1918.

The Sanatorium which I have the privilege of superintending is situated fifteen miles from the city of Glasgow, and consists of three pavilions—two for women and one for men. It has accommodation for 150 patients. These come from every part of Scotland—from Gretna in the south to Shetland in the north. Our patients are chiefly drawn from the industrial classes. About 90 per cent of those presently in residence are insured under the National Health Act. We have always from 10 to 20 per cent private patients in residence, among whom are a fair number of professional people—teachers, ministers, and dentists, &c.

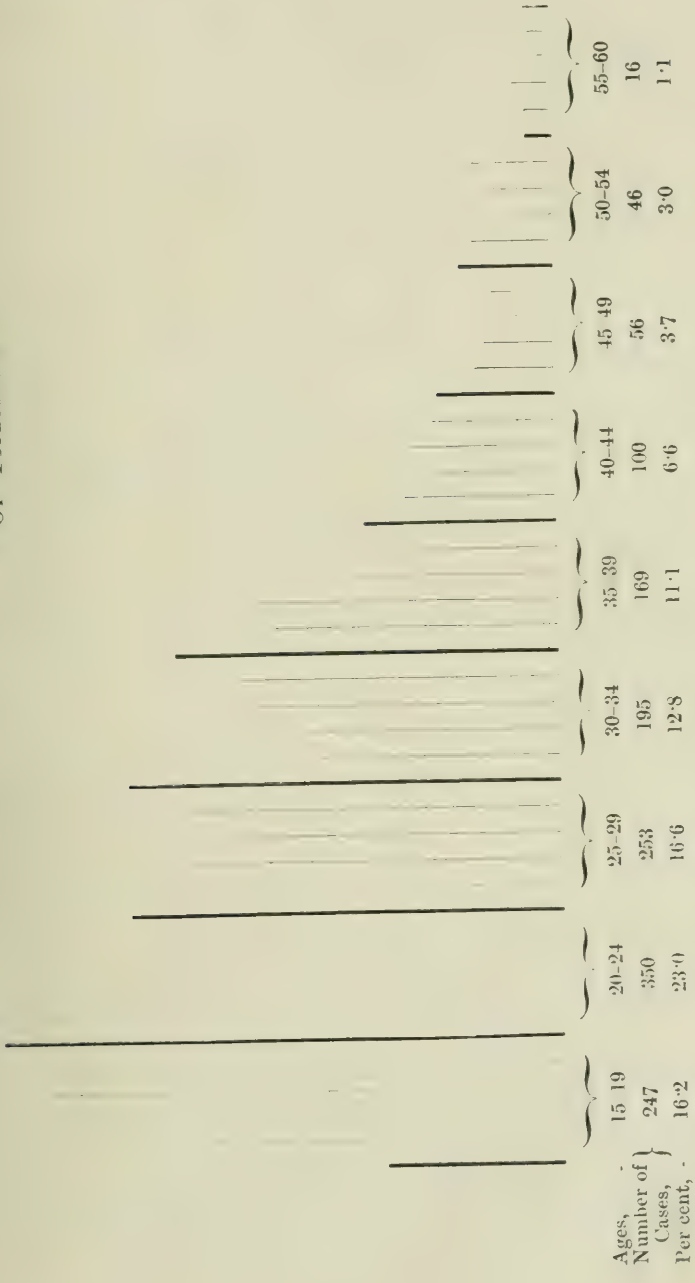
During the past five years 1,520 patients have been treated and discharged; 639 of these were men, 798 were women, and 83 children. Their ages on admission were as follows:—

5 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
83	247	350	253	195	169
5·5 °/o	16·2 °/o	23·0 °/o	16·6 °/o	12·8 °/o	11·1 °/o.

40 to 44	45 to 49	50 to 54	55 to 59	over 60
100	56	46	16	5
6·6 °/o	3·7 °/o	3·0 °/o	1·1 °/o	0·3 °/o

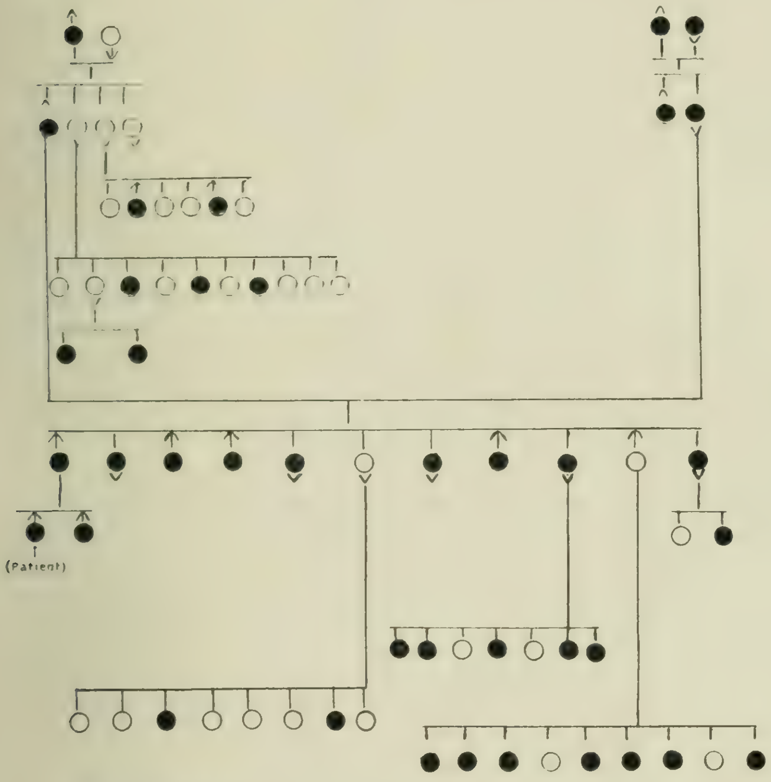
I have charted here the age distribution of these patients. It shows fairly accurately the periods, not of greatest liability to infection, nor yet of death, but of becoming incapacitated by the disease, and of being compelled to undergo a prolonged course of treatment. The figures below 16 years of age are not an accurate guide. Our accommodation for those below that age is much restricted. We are not able to admit all for whom application is made. Further, for two years out of the five, no children were admitted to the Sanatorium. Notice the viability of those years from 15 to 30. Nearly 60 per cent of the cases occur then. The worst period is from 20 to 25. This indicates emphatically that whatever the predisposing cause may be in

AGE DISTRIBUTION OF PHTHISIS.



individual cases—heredity, unhygienic environment, overwork or debilitating diseases—tuberculosis most often asserts itself at that period of life when development, physical and mental, is being completed, and when the greatest effort is being made to carve out a career or to attain a position in life. One has also noticed that very frequently the disease first shows itself within a few years of marital relationships being established, not only blasting the prospects of the individuals affected, but also bringing sorrow and hardships on husband or wife and children.

In those 1,520 cases we were able to trace a family history in 49·1 per cent. In the majority of these this family history did not imply that a weakened resistance to the disease had been inherited, but rather that those individuals had been subjected to great opportunities of being infected, and that at a period of life when susceptibility to the disease is always marked. In early life those antibodies—precipitins, opsonins, agglutinins, and lysins—which are our safeguards in later years, are not developed. Consequently an infection which in adult life would be successfully resisted, in early life might not be. The disease may not assert itself at the time. It may remain quiescent or non-progressive for many years, and only be awakened by the onset of some severe illness, or by the stress and strain of some special effort. There is, of course, such a thing as an inherited tendency to the disease. It asserts itself in a peculiarly conspicuous manner at times. In certain families the individuals die off with consumption one after another when they reach a certain age, despite the fact that they may not have lived together. It may be that one member of the family seems to escape. His or her family, however, might show the tendency to the disease. The most striking instance of this hereditary feature of the disease amongst those 1,520 cases was that of J. N., a Paisley man, who was a patient in the Sanatorium during 1914 and 1915. Here I have a diagram showing the remarkable number of individuals who in three generations died of this disease. It resulted from the union of two tuberculous individuals, whose parents also were tubercular. This patient had the following relatives die of the disease:—His paternal grandfather, his maternal grandmother and grandfather, his own father and mother, one maternal uncle, seven cousins, three brothers and five sisters, two sons and fifteen nephews and nieces. Out of 66 individuals, 39 persons died of tuberculous disease of the lungs. If anything were an argument against the marriage of consumptive persons, this surely is. One might



The solid black circles denote deaths from tuberculosis in the family of J. N., Paisley.

also say here that in the other two sections of the work at Bridge of Weir the effects of this disease are very much emphasised. I have been told that prior to the War, were it not for consumption and alcohol, there would be little need for the Orphan Homes, and certainly in endeavouring to trace out the causation of epilepsy in patients at The Colony of

Mercy for Epileptics, one is greatly struck by the association of the disease, not with mental disease in the parents, but with alcoholism and consumption in one or other parent or grandparent.

It is always interesting and instructive to note the first symptoms complained of by patients, or the disease which ushers in such a serious malady as consumption. A study of these is a guide in the diagnosis of the disease. Mark you, the first symptom complained of is by no means always the first symptom evinced of the disease. The one may antedate the other by many months or years. As a matter of fact, in the majority of instances at the period of infection the development of the first tubercle, or the first crop of tubercles, there are very few, or no symptoms at all. The patient may feel run down, be easily tired, look pale, lose weight, and have a slight temperature at night. It is only when the disease has developed, and secured a firm hold, that definite symptoms become marked. Frequently the infection has taken place years previous to the onset of these symptoms, but the disease has remained quiescent till awakened by some intercurrent affection. In certain instances certain diseases seemed to provide a channel for the entrance of the *bacillus tuberculosis*, and by reducing the vitality of the tissues locally, and of the patient generally, make the development of the disease easy.

Analysing the diseases and the symptoms which marked the onset of tuberculosis in these cases, we found that—

(1) In 60·5 per cent they were referable to the respiratory system.

Coughs and colds,	477
Pleurisy,	184
Hæmoptysis,	86
Bronchitis,	63
Asthma,	7
Pneumonia,	50
Laryngitis,	45
Silicosis,	5
Bronchiectasis,	3
	920

(2) In 12·4 per cent they were referable to the alimentary system.

Indigestion,	84
Diarrhœa,	37
Anorexia,	31
Vomiting,	10
Ischio-rectal abscess or fistula in ano,	14
Peritonitis,	12
	188

(3) In 2·8 per cent they were referable to the circulatory system.

Tachycardia,	10
Dyspnœa,	32
	42

(4) In 25 per cent they were general in character, and referable to other systems.

Fatigue and general weakness,	134
Adenitis,	50
Rheumatism,	10
Bone and joint disease,	6
Anæmia,	20
Nervousness,	21
Measles,	6
Whooping cough,	4
Loss of weight,	31
Parturition,	10
Night sweats,	12
Headaches,	12
Trauma,	3
Rigor,	4
Menorrhagia,	25
Amenorrhœa,	32
	380

Classified according to their frequency, the most important were as follows:—

Coughs and colds,	477
Pleurisy,	184
Fatigue and general weakness,	134
Hæmoptysis,	86
Indigestion,	84
Bronchitis,	63
Pneumonia,	50
Diarrhœa,	37
Shortness of breath,	32
Loss of weight,	30
Menorrhagia,	25

A partial explanation of this very varied manifestation of the disease in its initial aspects is to be found, no doubt, in the fact that tuberculosis is a toxæmia akin to septicæmia. As the tubercles form, caseate, rupture, and multiply proteins and ptomaines are manufactured and thrown into the circulation. These toxins have a peculiar affinity for brain tissue, and consequently, through the central nervous system, any system of the body may be affected. The symptoms thus given rise to may completely mask the pulmonary evidences of disease.

One striking feature of the disease is its insidiousness. It begins small, gives off a little toxin at a time, the nervous system becomes more or less tolerant to it, and although if looked for the disease could be recognised, yet nothing startling occurs to indicate that anything serious is wrong. I speak, of course, of the chronic form of the disease. In the acute variety, popularly known as galloping consumption, in which a patient dies in from three weeks to three months, he may be suddenly so felled with the toxæmia as to make one think of acute pneumonia or of typhoid. It is in this insidiousness of the disease that its danger lies. Were it less so, if it began, for example, as it sometimes does, with an acute attack of pleurisy or a sharp hæmoptysis, it would be taken more seriously at a hopeful stage, and fewer people would die of it. Analysing the probable duration of the disease previous to admission to the sanatoria, we obtained the following figures:—

22·2 °/o had suffered from the disease under six months.
10·9 °/o ,, ,, from 6 to 12 months.
15·6 °/o ,, ,, ,, 1 to 2 years.
9·1 °/o ,, ,, ,, 2 to 3 ,,
7·0 °/o ,, ,, ,, 3 to 4 ,,
3·3 °/o ,, ,, ,, 4 to 5 ,,
8·7 °/o ,, ,, ,, 5 to 8 ,,
3·8 °/o ,, ,, ,, 9 to 12 ,,
1·1 °/o ,, ,, ,, 13 to 16 ,,
18·6 °/o ,, ,, for an indefinite period.

These figures may seem incredible, but they were obtained after careful questioning and investigation. It does appear remarkable that in 18·6 per cent of the cases it was impossible to fix on a time when they did not give symptoms indicative of tubercular disease. Truly tuberculosis can claim to be the premier disease from the point of view of chronicity. The fight often is a prolonged one, but victory is not always to the enemy.

This duration must be kept in mind when considering the next point which I wish to call to your notice, viz., the condition of the patients on admission to the Sanatorium and the condition on discharge from the Sanatorium. You can understand that if a disease has existed as it had in over 67 per cent of those cases for more than a year, it was fairly well marked, and correspondingly difficult to eradicate.

On admission—	Men.	Women.	Children.
144 or 9·5 °/o were early, . .	45	81	18
901 ,, 59·3 °/o ,, intermediate, .	366	486	49
475 ,, 31·2 °/o ,, advanced, .	288	231	16

The terms used—early, intermediate, and advanced—are those of Turban of Davos Platz, and refer to the extent of the disease in the lungs.

Early means disease of slight severity, affecting at most one lobe or two half lobes. *Intermediate*, disease of slight severity affecting at most two lobes, or great severity and affecting at most one lobe. *Advanced*, all cases of greater extent and severity than stage two, and all cases with marked cavity formation.

9·5 per cent seems a very low percentage for early cases. The explanation of this is no doubt varied. For example :—

1. The difficulty of diagnosing the disease in the early stage. It cannot in its very earliest stage ever be positively diagnosed. It takes two or three weeks for a tubercle to form. By the time that this caseates and ulcerates, two or three months may elapse, and it may be six months to a year before there be a crop of tubercles sufficient to make a lesion diagnosable.

2. The fact that in the early stages of the disease the patients often do not feel ill. They are not quite what they ought to be, but they feel it is not sufficiently serious to call for drastic treatment and the sacrifice of work and of other interests.

3. The reluctance that many patients have to consult a physician. When they do so it is often not on account of the disease itself, but of some serious complication, such as laryngitis, pleurisy, hæmoptysis, dyspepsia, and diarrhœa. Frequently have I wished that tuberculosis always showed itself by a sharp hæmorrhage right at the outset. That is seldom fatal, and the sight of blood awakens a person to the seriousness of the condition as nothing else does.

4. The shrinking that people have from a sanatorium. They don't like to feel that they are ill with consumption. They do not want to be branded as tuberculous, and, blinding themselves foolishly, refuse to submit to the only reasonable and fairly certain method of cure at that early stage.

Of all reasons for the small number of early cases I am afraid the chief one is that the disease is not recognised by general practitioners early enough. Phthisis is not suggested to their minds till the disease has advanced so far in the lung that toxæmic symptoms are strikingly noticeable, and the other lung has become affected. Many cases were sent in in a late intermediate or hopelessly advanced condition, which were not diagnosed as tuberculous till a week or two previous to admission, although they for months or years had been in attendance at a doctor or dispensary.

What were the results of the treatment?

157 or 10·3 % had the disease arrested—58 were early cases, 95 intermediate, 4 advanced.

960 or 63·2 % were improved—77 were early cases, 658 intermediate, 225 advanced.

403 or 26·5 % were not improved, or died—9 were early cases, 148 intermediate, 246 advanced.

Note we do not use the word "cured." One does not imply that the disease is not curable. Perhaps of all chronic diseases phthisis is the most amenable to treatment, and most often cured. The opposite is often believed, and has been for 2,500 years at least—since Hippocrates taught that every case of tuberculosis of the lungs was hopeless. One of my old professors used to affirm that he was positively certain that phthisis was curable. He was certain because he had himself been cured. No one, however, can be said to be cured of the disease till he or she is free from all symptoms or signs for eight or ten years.

The term "disease arrested" implies that the temperature and pulse were normal: there was no cough nor spit, and therefore no tubercle bacilli: the general condition was good, and the weight normal.

Note among those who had the disease arrested, that the early cases easily lead the way. 40·3 per cent of those had the disease arrested: only 10·6 per cent of the intermediate, and 0·3 per cent of the advanced received the maximum amount of good. This shows strikingly the immense benefit of early treatment, and the vital necessity of diagnosing the disease in time.

Regarding the improved, many undoubtedly have been permanently helped, and are going on to complete cure. The improvement has continued since they returned home. Many, alas, have gone downhill, and become worse on returning to their old environments and habits.

It may seem strange that 6·2 per cent of the early cases did not improve, in spite of sanatorium treatment. The personal factor in these cases told against them: the soil suitable and well prepared favoured the further development of the disease only too well.

It must always be borne in mind in phthisis that there are few early cases so well that you can be certain that they will be cured, and there are few advanced cases so ill that you can with certainty say that they will not be arrested or greatly improved.

There are several things that we always look to when patients are under treatment, such as temperature, pulse, respiration, quantity of spit from day to day, bacilli in spit, the complications of the disease, increase or decrease in weight.

Let us look at a few of these as far as time permits:—

1. *Bacilli in the sputum.*—It is our rule in the Sanatorium to examine the sputum, if there be any, immediately the patient is admitted. If the result is negative the examination is repeated until it is positive, or until thirteen negative results have been returned. Thereafter the sputum is examined at least once each month. Previous to discharge it is again, if it has been negative, examined for thirteen consecutive days, or until a positive result is recorded. In other words, we never state in our reports that a specimen is negative until thirteen have been examined and found negative. You can therefore understand that frequently during a period of four to twelve months a patient's spit may be examined 30, 40 or 50 times. In examination we use three methods:—

1. The Ziehl-Neelsen stain. That is our regular routine stain.

2. Spengler's picric acid stain. That we resort to if the return is repeatedly negative.

3. The antiformin concentration test. This we use finally whenever a spit persistently fails to show tubercle bacilli.

There is no doubt that the picric acid stain used with a fairly thick film is much better than the Ziehl-Neelsen. It shows the bacilli frequently when the other does not, or it shows them more numerously when they are present. The concentration method seldom shows bacilli if we have failed to find them by the picric acid stain. The results of our examinations were:—

On admission—

Present.	Absent.	
1,059	420	
69·7 °/o	27·6 °/o	41 or 2·7 °/o had no spit.

On discharge—

Present.	Absent.	
678	653	
44·6 °/o	42·9 °/o	189 or 12·4 °/o had no spit.

It is very interesting to note the number of times that the sputum had to be examined before tubercle bacilli were found. I investigated the results of 2,204 sanatorium cases recently. Of these, 60·9 per cent showed the bacilli on the first examination; 14·1 per cent showed the bacilli later; 25 per cent never showed any, although the spit was very frequently examined. In more detail the bacilli were found after the spit had been examined the following number of times:—

1	2 to 5	6 to 9	10 to 13	14 to 16	17 to 18
1,343	231	37	19	19	4

356 never had tubercle bacilli in the spit. 45 cases had no spit on admission: it showed itself later with very negative results. 153 cases never had any spit.

These figures show the fallacy of depending entirely upon the results of a sputum examination in the diagnosis of the disease, and of declaring a case non-tubercular from a single negative result. The diagnosis should be made before there are any tubercle bacilli seen in the spit—before rupture of tubercle nodules takes place into the bronchial vessels.

One can never regard a case showing tubercle bacilli in the sputum with equanimity. Many that never show tubercle bacilli present do not do well. That, however, is the exception. On the other hand, if a patient persistently shows tubercle bacilli present in the spit. he is living on the edge of a volcano, which may break into eruption at any time with disastrous results. These patients are never safe against a relapse, no matter how well they may seem. They are centres of infection from which the disease spreads no matter how careful they may be.

2. *Increase in weight.*—To this we always pay close attention. The patients are weighed on admission with a stated amount of clothing on, and re-weighed each week. We have got beyond the period of stuffing in the cure of phthisis. I was taught that to arrest the disease one thing was essential—that was to make the patient fat. It is not true. Frequently I have seen patients become very stout, and become progressively worse. We certainly place hyperalimentation along with hyperareation as the foremost plank of our platform in treatment: but our aim is not merely to make our patients fat. We endeavour to get our patients to feed up to the limit of their digestive capacity, but not beyond it. Three good meals a day, varied as much as possible, and no snacks is our rule. Definite and permanent improvement can not be looked for until the normal weight of the individual has been reached, or slightly passed. In most instances patients come much reduced in

weight. Regarding those 1,520 cases, during treatment 83·1 per cent gained weight; 12·1 per cent lost weight; 4·8 per cent were not weighed on discharge.

Just a few words upon the complications and intercurrent affections which we met with in these cases. Classified according to their relative frequency, these have been as follows:—

Pleurisy,	326 cases
Dyspepsia,	243 ,,
Tubercular laryngitis,	159 ,,
Hæmoptysis and coloured sputum,	138 ,,
Diarrhœa,	120 ,,
Adenitis,	84 ,,
Anæmia,	79 ,,
Rheumatism,	57 ,,
Tubercular abscesses,	54 ,,
Ischio-rectal abscesses and fistula in ano,	43 ,,
Ulceration of the intestines,	29 ,,

Among other complications we had bronchiectasis, meningitis, pericarditis, pneumothorax, hæmorrhoids, cystitis, nephritis, menstrual disorders, epilepsy, herpes, sciatica, Addison's disease, goitre, bone and joint disease, &c. Time does not permit me to do more than mention these. Certain of these complications make the death struggle very painful, particularly diseases of the larynx, ulceration of the intestines, and pneumothorax.

It is a remarkable fact that seldom does hæmoptysis, common complication though it is, cause death. In these 1,520 cases, that only happened in two instances. Occasionally through the aspiration of tuberculous material, it gives rise to a pneumonic condition, and converts a chronic case into an acute one, and leads to death in a few weeks. That was our experience in six cases. Another remarkable thing is the comparative rarity of pneumothorax as a complication. Only on three occasions did it occur spontaneously, although we have induced it hundreds of times in the treatment of the disease. In each of these spontaneous instances it led to death with great distress. In another case of spontaneous pneumothorax, we only diagnosed it fortuitously when examining with the x-rays. The patient gave no history of pain or distress in breathing at any previous period, and it caused no discomfort.

Finally let me direct your attention to the period of stay of these patients in the Sanatorium :—

The average period for men was	157·1 days.
The average period for women was	197·4 days.

These may seem long, but I have no hesitation in saying that if they had been longer, especially in regard to the early and intermediate cases, the results would have been more satisfactory. The question is often asked how long should a patient stay on in a sanatorium. In the light of these five years' experience, I emphatically say, as long as the patient is going uphill and improving. It may be six months: it may be two years. Three months is seldom of any use—it is too short. Never have I regretted keeping an early or intermediate case on too long. Often have I had cause to be sorry that patients who were doing well left too soon. The longest period that any one patient was in the Sanatorium was a little over two years. If he had left at the end of one year, there is little doubt that he would have died. He is doing well to-day.

In chronic cases of tuberculosis the bacillus usually has gained the mastery only after a prolonged struggle, covering many months or years. Its mastery can only be overcome by prolonged and persistent effort. Consider what has to be done in arresting the disease. If the condition is only at the stage of invasion and proliferation, absorption and phagocytosis must take place. If the condition has reached the stage of caseation, encapsulation and fibrosis or calcification must take place. If ulceration and cavitation, then sterilisation, cicatrisation, contraction of the cavity, and adaptation of the chest wall. You can therefore understand that these take time. At the stage of invasion and proliferation, at least six months should be allowed; at the stage of caseation, twelve to eighteen months should be allowed; at the stage of ulceration and cavity formation, two to three years should be allowed.

Trusting to general appearances and personal feelings has frequently proved fatal. Effort has been relaxed, and persistence in treatment dropped. It does not pay to delay sanatorium treatment of phthisis, nor yet does it pay to give up sanatorium treatment while progress is being made, although looks are satisfactory.

In conclusion, I must thank you for the privilege and pleasure of addressing you, and the patient hearing which you have accorded me.

As I feared, I have attempted to compress into one lecture material sufficient for many lectures. I trust that the evening has not in consequence been profitless for you. It is always better to do one thing well than many badly, and I fear I have done the latter. It is an important subject. Year by year throughout the world this fell disease in its protean forms slays three to four million people. Our own country has a smaller death-rate from it than any other European country except Belgium, yet even here fifty to sixty thousand die of it annually, a larger number than die of any other disease. A new interest in recent years has been awakened in it. Fresh efforts are being made to conquer it. You will each one play a part in that conquest. It is to be hoped that the results will be as successful as those of our forbears of a less scientific age in their struggle with and against a sister scourge now happily unknown in our midst—leprosy. Tuberculosis is curable, and, if thoroughly coped with, it should be eradicated.

THE CAUSES OF INFANTILE MORTALITY.*

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MUCH has been said lately of the desirability of Government action towards the inauguration or encouragement of ante-natal and post-natal cliniques, milk depôts and similar institutions. It is very doubtful, however, if the good that will accrue from institutions of this kind will be at all commensurate with the expectations that have been aroused or with the expense that would be entailed. Professor Donald, of Manchester, has recently written[1] to show how little real progress in the study of ante-natal mortality and in the knowledge of the diseases of the pregnant woman can be expected from these measures, and I am inclined to be equally pessimistic regarding the effect of the post-natal cliniques and child-welfare societies in seriously reducing the infantile death-rate. Mortality at birth and in childhood would seem to offer much more complex problems than is commonly imagined, and to have its roots more deeply situated than can be touched by the proposed schemes.

I.—THE EFFECT OF INFANT WELFARE SCHEMES ON INFANTILE DEATH-RATE.

During the past ten or fifteen years several municipalities have inaugurated schemes for Milk Depôts or for Infant Cliniques, with the hope of reducing the infantile mortality. A study of the infantile death-rates in towns where such measures have been adopted, *e.g.*, Liverpool, Bradford, Poplar, and Glasgow, does not, however, support the contention that these methods are of much value in seriously decreasing the evil.

If one examines the infantile death-rates of England, Scotland, and Ireland generally, and of these various towns, it will

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* Preliminary Report to the Medical Research Committee, National Health Insurance. Republished by kind permission of the Committee.

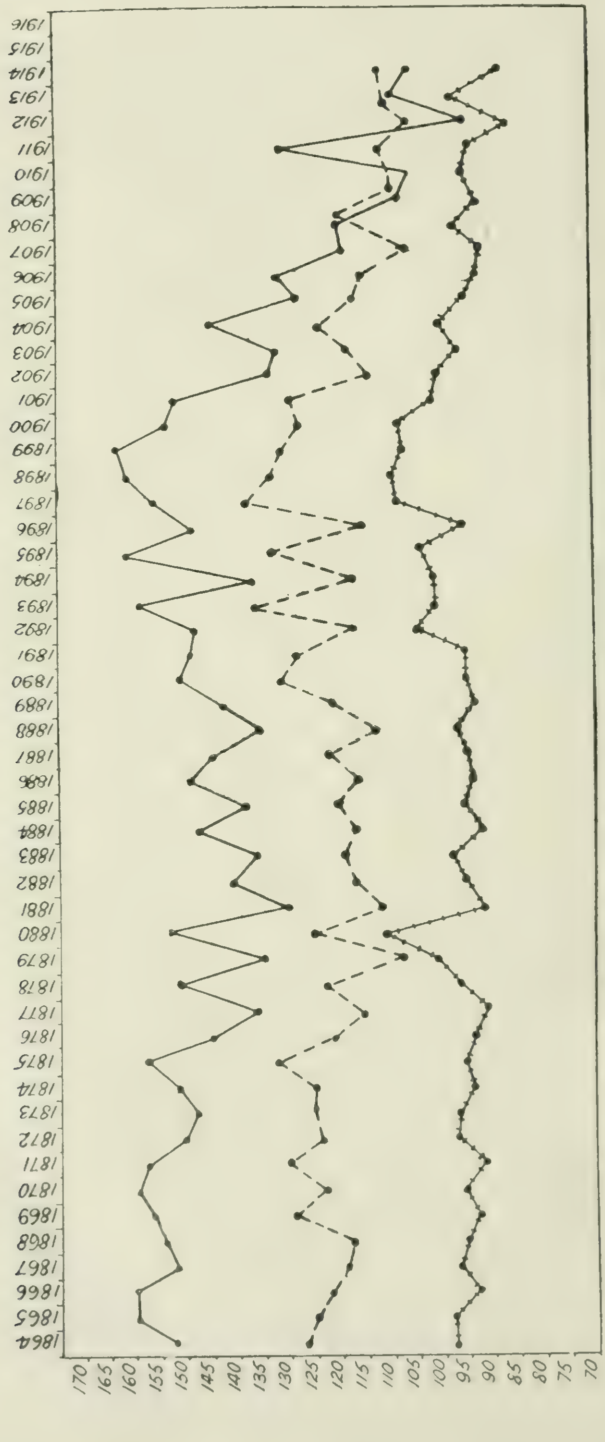

CHART I. Infant Mortality Rate of England —— Scotland - - - - and Ireland +++++++ from 1864.
From Annual Report of R G. of Ireland, 1914.

be seen that about the year 1900 there set in all over the kingdom a decline in the death-rate, and that the various curves follow practically the same course and are unaffected by the introduction of the measures above mentioned (see Charts 1 and 2).

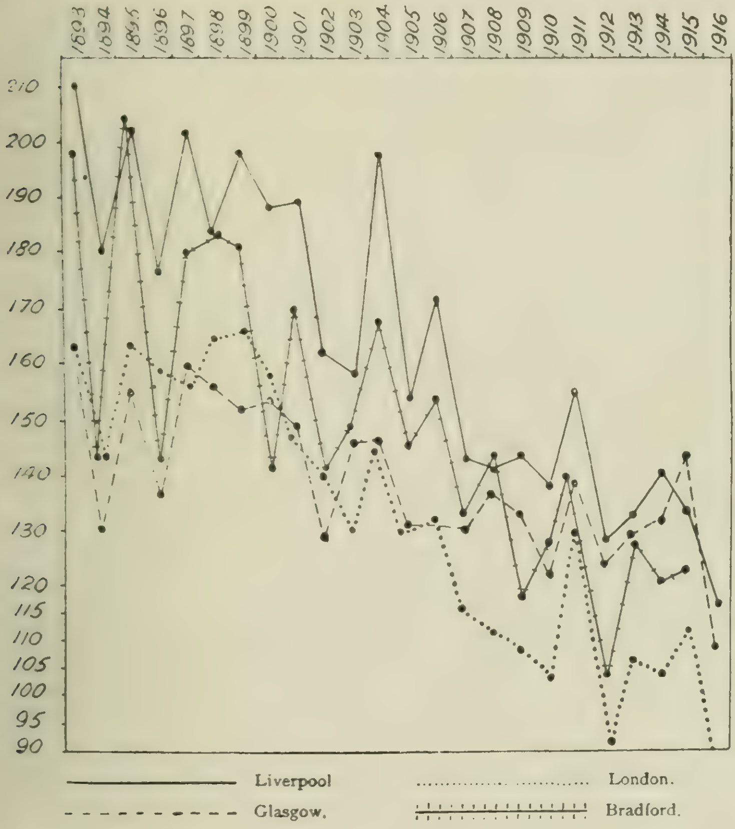

Chart 2.

Infantile death-rates of Liverpool, London, Glasgow, and Bradford, from 1893 till 1916.

The Medical Officer of Health Liverpool, in his Annual Report for 1914, speaks enthusiastically of the effects of the Milk Depôt which was started in 1901. According to the figures in the Report the Depôt did not become popular for some years, though the decline in the death-rate set in contemporaneously with its opening. In Glasgow a similar depôt was opened in 1904, but the curve for this town shows, just as in Liverpool, a decline commencing in the year 1900 with no acceleration of the fall after 1904 and continuing till 1912, although the depôt was abandoned in 1910.

An Infant Clinique was started in Bradford in 1912, and certainly the infantile death-rate for that year shows a marked fall; but, as will be seen from the various curves, the death-rate all over the country for 1912 was the lowest ever recorded until that date (Chart 2).

The various charts (Nos. 1 and 2) show from year to year a wonderful uniformity in the behaviour of the different curves. In fact, it is most striking how in such widely separated towns as London and Glasgow the apices and dips of the curves coincide, so that one is hardly justified in ascribing any result, which is so general, to the adoption of a particular measure in any individual town.

Recently there appeared the following paragraph in the London correspondence column of the *Glasgow Herald* concerning the Infant Welfare Scheme of Poplar:—

"It is remarkable and disappointing that in Poplar the death-rate [infantile] has continued to rise, and has gone up from 83 to 117 per thousand ever since the inauguration of the baby-saving campaign. The chief lady health visitor is quite candid, admitting that the increase has come about despite the amount of money and energy spent by the various organisations working directly and indirectly for the preservation of infant life. She thinks that sometimes there is too much visiting, and observes: 'I myself was unfortunate enough to be the fifth to call on one mother, and the number of visitors who might call is positively staggering when you try to reckon them up.'"

II.—The Influence of Wages.

The decline of the infantile death-rate during 1916 concurrent with the high wages earned has been suggested as evidence that it is in great part a question of wages. This, of course, is an old idea and one that has often been expressed, but a critical study of the available data shows how unwarranted such an assumption is.

After the declaration of war the death-rate at first rose, but during 1916 it fell considerably, and in most places has been the lowest ever recorded (see Chart 3).

In 1915 the working and labouring classes were quite as prosperous—in fact, their purchasing power was really greater,[2] so that the fall in 1916 is more probably due to some other factor, *e.g.*, a diminution in the severity of epidemics of such diseases as measles and whooping-cough. The importance of this factor is well exemplified in one town in the West of Scotland (Coatbridge), where, although as in the West of Scotland generally, there has been increased prosperity, the death-rate has increased. A survey of the death returns for this town shows that an epidemic of measles was the contributing

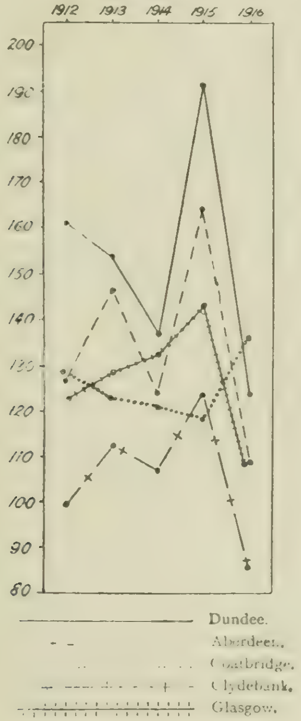

CHART 3.

Infantile death-rates in Dundee, Aberdeen, Coatbridge, Clydebank, and Glasgow, from 1912 till 1916.

factor, whereas in Scotland generally, and in Glasgow particularly, deaths from this disease were during 1916 unusually few.*

The unlikelihood of the wage element being a factor of any moment is supported by the fact that in times of famine and industrial trouble the infantile death-rate usually falls. This was well exemplified in the famous Lancashire cotton strike, and, more recently, during our own time. During the year 1912 the number of people involved in disputes causing stoppage of work and the aggregate duration of working days lost was the highest on record, and yet, with the exception of 1916, the infantile mortality was the lowest ever recorded in most of the chief towns of Scotland and England.† (See Charts 1 and 2.)

III.—THE ZYMOTIC DISEASES.

The importance of the zymotic diseases and their complications as a cause of death during the first year of life cannot be over-estimated. For example, in Glasgow during 1914, 23·6 per cent of all the deaths under 1 year were due to measles, whooping-cough and gastro-enteritis, and 18·4 per cent were due to bronchitis and broncho-pneumonia, many cases of which were no doubt complications of these diseases.

Infantile deaths occurring monthly for the sixteen chief towns of Scotland collectively, and for Glasgow individually, demonstrate this point most strikingly. From charts of these it is also seen how the mortality from these various diseases may cause a variation in the general infantile death-rate.

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* Since this article went to press, the Medical Officer of Health of Glasgow has made known the chief points in his report for the year 1917, and the facts relative to the infantile death-rate are of special interest to us. This rose to 127 (in 1916 it was 109, the lowest on record), and, in the words of Dr. Chalmers, was mainly due to deaths from whooping-cough, which numbered 855, as against 162 in 1916.

† During 1912 there was a prolonged coal strike. It commenced on 26th February, and by 4th March 1,000,000 workers were on strike and another 1,000,000 idle in consequence. This strike was settled on 8th April. From 25th May till 10th August there was the Port of London strike (*Annual Register*, 1912, New Series). In 1912 there was also the lock-out in the cotton trade, which commenced in 1911. The coal strike of 1912 accounted for the loss of 30,000,000 working days (*Hazell's Annual*, 1914).

Apart from the seasonal variations, a certain swing, suggesting periodicity over a longer period than the charts represent, becomes quite apparent. This is most marked with reference to bronchitis and broncho-pneumonia, but it is also seen in connection with measles, whooping-cough, and gastro-enteritis. In the year 1912 the deaths from gastro-enteritis were comparatively few; in 1913 they were more numerous; in 1914 they reached their maximum, and declined in 1915; and in 1916 rose again slightly. Whooping-cough shows a tendency to recur every second year with increased virulence.

Brownlee has frequently drawn attention to the periodicity of epidemics of the zymotic diseases, and therefore it would not be surprising to find that there prevails a certain periodicity in the death-rates from these same diseases. One cannot expect the curves of the death-rates, more especially when these are limited to the case of children under 1 year, to obey the same mathematical laws so accurately as the curves referring to the incidence of the disease in the general population. Nevertheless, the behaviour of the curves for the few years I have chosen is so striking as to arrest attention and to warrant further investigation. Should the law of periodicity of deaths from these causes during infancy be substantiated it will be necessary to consider this factor in estimating the benefit of any scheme for diminishing our infantile mortality. In this connection it is difficult to see how the institution of centres, where large numbers of children aggregate, can act otherwise than as foci for the dissemination of infectious disease in addition to those afforded by schools.

IV.—Housing Conditions.

A recent investigation on the Etiology of Rickets carried out in Glasgow under the auspices of the Medical Research Committee seems to indicate that among the most important determining factors are bad housing and over-crowding, with deficient opportunity for open-air life. This naturally suggests the bigger question in how far these same factors are also responsible for much of the infantile mortality. Rickets itself indirectly plays a part in a certain proportion of the infantile deaths in so far as it increases not only the frequency, but also the mortality, of the respiratory sequelæ of such diseases as measles and whooping-cough.

A consideration of the housing conditions of the poorer classes lends support to the idea that they play a prominent rôle in the causation of infantile deaths. The mortality rate is higher in the town than in the country, *e.g.*, in 1913 it was for Scotland generally 110, for the sixteen largest towns 125, and for the rural areas 92; in 1914 the corresponding figures were 111, 124, and 92. The death-rate is highest in the most densely populated districts of the large towns and higher in a city such as Liverpool than in its industrial suburb Port Sunlight.

	Liverpool.	Port Sunlight.
1911, ...	154	52
1912, ...	125	81
1913, ...	132	104
1914, ...	139	74
1915, ...	133	101

It has been shown, too, how renovation of a slum area may diminish considerably the infantile death-rate. The following is a quotation from the Report of the M.O.H. of Liverpool on the Infant and Welfare Scheme for 1916 (p. 25):—

"The work of the Corporation in clearing the slum areas has resulted in great benefit not only to the general health of the population, but more particularly to that of infants and young children. The Housing Committee have erected nearly three thousand dwellings on sites formerly occupied by insanitary property, and these dwellings now house a population of 11,000 persons. It was shown at the enquiries relating to the demolition of the houses that the general death-rate averaged nearly 40 per 1,000 and the infantile mortality 300 per 1,000 births. The people who were displaced now inhabit the dwellings erected by the Corporation, and the general death-rate of the population of these dwellings has been reduced to 28 per 1,000, and the infantile mortality rate to 167 per 1,000 births."

It hardly seems likely that any number of visits to infant cliniques will ameliorate the health of the infant so long as it has to spend its time in unhygienic surroundings. This is well exemplified in hospital practice. Not infrequently children are admitted to hospital suffering from marasmus, enteritis, or broncho-pneumonia and recuperate, and are given back to the parents almost normal children, only to return with a relapse in a matter of a month or even less. Again recovery may take place, but it is less likely: and should the child be dismissed well, it may even return a third time, when it will almost certainly die.

It must be admitted that ignorance on the part of the parents may play a certain part in bringing about such results, and in the direction of educating the parents the Infant Welfare Scheme and Infant Cliniques may and ought to do some good.

V.—PREMATURITY AND MARASMUS.

One of the most striking features of all analytical curves of infantile mortality is the constancy of the deaths which are ascribed to prematurity and congenital defects. In Glasgow these conditions were responsible in 1914 for 30·9 per cent of all the deaths under 1 year of age. This class, however, is the most unsatisfactory chapter in all infantile vital statistics. Undoubtedly, all children are not born into the world possessed of equal physical powers any more than of similar mental endowments, and many die as a result of some inherent weakness of constitution or error in their make-up. Congenital heart disease and malformations of the gastro-intestinal tract may be cited as good examples.

Unfortunately, however, there are included under this heading deaths from so-called marasmus and chronic gastro-intestinal catarrh. It is certainly true that many examples of marasmus or wasting are due to some inherent error of metabolism—assuredly a congenital defect of a kind—but it is equally true that many of the children are the victims of some adverse circumstance, either culpable or accidental, of their environment. The first example that occurs to one's mind in this connection is the case of a child contracting tuberculosis from the ingestion of tuberculous milk. There is, indeed, much evidence that many cases of wasting or marasmus are not examples of immaturity, but are in reality due to tuberculosis, chronic pneumonia, and infection of the urinary tract.

One gets, I think, an erroneous impression of the frequency of death due to congenital defects from statistics published by the Registrar-General. In the Royal Hospital for Sick Children, Glasgow, from 1903 to 1913 the deaths under 1 year from congenital affections varied from 7·5 per cent to 16 per cent, a very different figure from the 30 per cent above quoted. When one recollects, too, that no infectious cases are admitted to such a hospital the difference between these former percentages and those of the Registrar-General becomes even greater.

VI.—Conclusions.

This short paper is of the nature of a preliminary communication to focus attention on certain points of this difficult question of infantile mortality.

1. The apparent periodicity in the death-rates from the various zymotic diseases, which seems to explain not only the variations in the death-rate from year to year, but in different parts of the country at the same time.
2. The importance of environment (housing, &c.) as a factor in causing the present high infantile mortality.
3. The necessity for a more thorough study of that class of case called "Prematurity or Congenital Defect."
4. The need for a more scientific investigation of the results following schemes of Infant Welfare to determine their true effects.

REFERENCES.

[1] *Brit. Med. Jour.*, 8th July, 1916.

[2] Miss Ferguson, *Proc. Roy. Soc.*, *Edin.*, vol. xxxvii., pt. 2, No. 8.

Obituary.

JOHN H. ARBUCKLE, M.D. GLASG., KILMARNOCK.

WE regret to announce the death of Dr. John H. Arbuckle, which took place at his residence, Clark Terrace, Kilmarnock, on 16th January. Dr. Arbuckle, who was in his seventy-third year, was educated at Glasgow University, where he took the degrees of M.B., C.M. in 1870, and that of M.D. in 1872. Three years later he took out the Cambridge diploma in public health. His earlier hospital appointments were in Liverpool, and during that time he contributed important papers to this and other medical journals. Returning to Scotland, he settled in Kilmarnock, where he devoted himself to public health and medico-legal work, his abilities in these directions securing recognition by his being appointed medical officer of health for the burgh of Kilmarnock, and examiner in medico-legal cases for North Ayrshire.

THOMAS P. GEMMELL, M.B., C.M. GLASG., AIRDRIE.

WE regret to announce the death of Mr. Thomas P. Gemmell, which took place at his residence, Lornbank, Airdrie, on 7th February. Mr. Gemmell received his medical education at Glasgow University, where he graduated M.B., C.M. in 1880. Settling in Airdrie, he rapidly established himself in favour there and built up one of the largest practices in that populous industrial district. For many years he held the appointment of parochial medical officer. Mr. Gemmell was 61 years of age.

WILLIAM RIDDELL WATSON, L.R.C.P. Glasg.,
London.

We regret to announce the death of Mr. William Riddell Watson, late medical superintendent of Hawkhead Asylum, which took place at London, on 9th February. He was a native of Glasgow, and after taking the triple qualification spent some years in general practice in Aberdeenshire, Kirkcudbrightshire, and Ayrshire. In 1876 he was appointed district medical officer for Bridgeton under the old Barony Board, and in 1883 he became medical superintendent of Merryflats Asylum under the Govan Parish Board. In 1894 he was appointed medical superintendent of the new asylum at Hawkhead, and he had much to do with the design, construction, and arrangement of the institution. Mr. Watson specialised for forty years in mental diseases, and his opinion and advice were often sought in difficult cases. He retired from Hawkhead about four years ago, and went to reside in London. At his death he was in his eightieth year. He leaves a widow and one son, who is a senior medical officer attached to the Department of the English Prison Commissioners.

CURRENT TOPICS.

Glasgow and West of Scotland Medical Association.—The annual meeting of the Association was held in the Faculty Hall on Wednesday, 13th February, the President, Dr. Leonard Findlay, in the chair. The reports of the Treasurer and of the Editors of the *Journal* were read and approved, and other business was transacted. The editorial report referred in appreciative terms to the assistance of Mr. Charles Bennett, on whom in the past six months a considerable part of the editorial work had fallen, and whose inability to carry on his valuable labours the Editors viewed with regret. In the continued absence of Dr. G. H. Edington on foreign service, Mr. George Macintyre was appointed interim assistant editor. The following is a list of the office-bearers appointed for 1918:—

President, ...	Dr. Leonard Findlay.
Vice-Presidents, ...	Dr. Geo. A. Allan. Dr. Arch. W. Harrington.
Editors, ...	Mr. George Henry Edington. Dr. William Robert Jack.
Editor of "Abstracts," . .	Dr. Roy F. Young.

Editorial Committee.

Dr. A. J. Ballantyne.
Dr. John Brownlee.
Dr. R. M. Buchanan.
Dr. E. P. Cathcart.
Dr. F. J. Charteris.
Dr. Leonard Findlay.
Dr. A. A. Gray.
Prof. R. Muir.
Dr. E. H. L. Oliphant.
Dr. J. R. Riddell.

Treasurer, ...	Dr. W. B. Inglis Pollock, 21 Woodside Place.
Secretary, ...	Dr. John Anderson, 7 St. Bride's Road, Newlands,

General Business Committee.

Dr. Galbraith Connal.	Dr. R. S. Fullarton.
Dr. J. M. Cowan.	Dr. W. Campbell Mackie.
Dr. Walker Downie.	Dr. George M'Intyre.
Dr. G. B. Fleming.	Dr. Archibald Young.

Auditors, ... Dr. W. Wallace.
Dr. John Shaw Dunn.

Royal Faculty of Physicians and Surgeons: Presentation of Portraits.—At the monthly meeting of Faculty held on 4th March there were exhibited two portraits of former Fellows, the presentation of which to the Faculty had been intimated at the previous meeting. The first of these was a portrait of Dr. Robert Perry, senior, which was bequeathed to the Faculty by a codicil to the will of the late Dr. Robert Perry, his son. The elder Dr. Perry was born in Kilmarnock in 1783, and educated at Glasgow University, where he took the degree of M.D. in 1808. He entered the Faculty in 1812, and became its President in 1843, holding office till 1845. He was, as Dr. Alexander Duncan's account of him states, physician to the Royal Infirmary for over thirty years, and also physician to the Fever Hospital in Clyde Street. As the result of original investigations in the latter institution, he submitted to the Glasgow Medical Society, of which he was an original member, a series of propositions, which establish a strong case in favour of his priority in the recognition of the non-identity of typhus and typhoid fever. He was an active worker in the great fever epidemic of 1843–44, and embodied his researches in his published *Facts and Observations on the Sanitary State of Glasgow* (1844). He died in 1848.

The second portrait was that of Dr. James Wilson, and was presented by Professor Munro Kerr, who said in making the presentation that James Wilson was born in 1784, entered the Faculty in 1816, and became M.D. of Glasgow University in 1837. From 1830 to 1838 he lectured on midwifery in the Portland Street School of Medicine. Dr. Alexander Duncan states that he was mainly instrumental in founding the Maternity Hospital in 1834. At that time the Faculty gave a grant of ten guineas annually, and continued this support until the Hospital was firmly established. This, however, was the second attempt at such a foundation. The first was made in 1805 by Dr. Wilson, and proved abortive, for neither the Faculty nor the general public gave him sufficient support. The committee appointed by the Faculty on this occasion indicated that their support would be given to the object of the movement when sufficient public interest should have been aroused. Wilson died in 1857, and his son, Dr. J. G. Wilson, who is still remembered by many Fellows of Faculty, reigned in his stead as physician to the Maternity Hospital, where father and son between them occupied the post of obstetric physician for almost fifty years. Professor Munro Kerr received the very cordial thanks of the President and Fellows of Faculty for his interesting and generous gift.

Both portraits are the work of Sir Daniel Macnee, and are typical examples of the artist in the fulness of his powers.

At the same meeting Mr. James Harper, M.B., Ch.B.Glasg., and Mr. W. S. Syme, M.D.Ed., were admitted Fellows of the Royal Faculty.

APPOINTMENTS.—The following appointments have recently been made:—

Royal Navy (4th February): To be temporary Surgeon—T. L. Gregory, M.B., Ch.B.Glasg. (1913).

5th February: T. L. Gregory, M.B., Ch.B., to Plymouth, additional.

Royal Army Medical Corps (2nd February): To be Major—Captain C. M. Drew, M.B., Ch.B.Glasg. (1904).

WAR HONOURS FOR GLASGOW GRADUATES.—The following decorations have been conferred by the King of Serbia upon graduates of Glasgow University:—Order of St. Sava, 3rd Class—Lieutenant-Colonel A. G. Hay, M.D.Glasg. (M.B., 1893), R.A.M.C. Order of St. Sava, 4th Class—Captain A. W. Harrington, M.D.Glasg. (M.B., 1900), R.A.M.C.; Major H. Rutherford, M.B.Glasg. (1884), R.A.M.C.; Captain R. S. Fullarton, M.D.Glasg. (M.B., 1898), R.A.M.C.; Major H. Walker, M.B., R.A.M.C.

THE ROYAL COLLEGE OF SURGEONS, EDINBURGH, AND A MINISTRY OF HEALTH.—The following statement has been issued by the Royal College of Surgeons, Edinburgh:—

The Royal College of Surgeons of Edinburgh, incorporated in 1505 and confirmed by Charter of King James IV in 1506, has now for more than four centuries concerned itself with questions of public health and the maintenance of a high standard of professional practice in the domain of surgery.

The question of the creation of a Ministry of Health having recently been revived and having attracted public attention, the Council of the Royal College of Surgeons has given the subject careful consideration, more especially in relation to Scottish requirements.

At a statutory meeting of Fellows of the College held on Tuesday, 5th February, 1918, a report was submitted by the Council to the College, and after free discussion the following recommendations were unanimously adopted:—

1. That whereas under the present system there is divided authority and responsibility among various Government departments and local health authorities, with consequent overlapping and loss of efficiency in administration, the Royal College of Surgeons cordially supports the proposal for the formation of a Ministry of Health which shall have full powers (under Parliamentary control) to deal with all matters bearing upon national health.

2. That owing to differences in local circumstances and legal procedure, there should be a Ministry of Health for Scotland, with direct Parliamentary representation, apart from that for England and Wales.

3. That in view of the economic and other reasons which may make it difficult to obtain a separate Minister of Health for Scotland, the desired purpose might be secured by an extension of the duties and powers already entrusted to the Local Government Board for Scotland, with the Secretary for Scotland as Minister of Health.

4. That as the whole subject, in which this College and the medical profession generally are deeply interested, is of national importance and great magnitude, this College respectfully submits that before any bill is introduced to Parliament the Royal College of Surgeons and other bodies, representative of the medical profession, should be consulted as to its terms.

5. That while the time is ripe for consideration of the many complex problems involved in a Ministry of Health, it is not

expedient to complete the necessary enactments before the conclusion of the war.

At the present time the Fellows and Licentiates of the Royal College, indeed the whole medical profession, are very largely employed on naval or military duty, or are otherwise preoccupied by work arising out of the war. Many of them are thus prevented from devoting their time and knowledge to the elucidation of the important problems connected with the coordination and improvement of national health legislation.

The College feels that it would be deplorable if legislation, hastily introduced without previous consultation with those who must necessarily be concerned in giving it effect, should occasion controversy between the medical profession and the Legislature. We have therefore been instructed to bring the above recommendations under your notice, and we ask you to give them your sympathetic consideration.—Signed on behalf and by authority of the Royal College of Surgeons of Edinburgh, R. M'Kenzie Johnston, M.D., president; George Mackay, M.D., secretary.

WOMEN WORKERS AND A MINISTRY OF HEALTH.—Mr. G. W. Currie, M.P. for Leith Burghs, in an address to the Women's Friendly Society of Scotland in the Central Halls, Glasgow, on 2nd February, described the new Insurance Act as one which cleared the air and gave approved societies a chance to show for the future what they could do. He referred to the suggested Ministry of Health, and said there was agreement as to the necessity of more fully utilising the resources of preventive medicine. On every side—medical, actuarial, and administrative—it opened a great sphere for women's work. Unfortunately the trouble with the 1911 Act was that its finances had monopolised attention and its preventive side had been starved. The current dispute as to machinery and the control of machinery was utterly unfortunate; indeed, the opposition to the English Local Government Board requests for the same powers to deal with infantile mortality which had yielded such good results in Scotland was an emanation of a very bad spirit indeed. He cared little what authority or department was entrusted with the lead so that a start was made with the work. The English Local Government Board was going to be associated with what was called the poor law taint, and probably if the remains of poor law troubles were handed over to the county councils that antipathy would weaken. Mr. Hayes Fisher was undoubtedly right that Parliament would not agree to entrust public money on an enormous scale to other than popularly responsible bodies; State grants, &c., must carry State control in one way or another. In Scotland the difficulty did not exist to the same degree; the Scottish Local Government Board was a much smaller office for one thing, and had less traditional inertia behind it. The fact that the legal system in Scotland was so different from that of England pointed to the desirability of a separate administrative department, and he was prepared to support a general enlarging and strengthening of county councils and municipal authority in Scotland on pretty wide lines, which might be made to include much of the actual direction of a new health measure.

THE IMPOSITION OF MONETARY PENALTIES BY THE INSURANCE COMMISSIONERS.—In view of a decision recently made by the Glasgow Burgh Insurance Committee, a crisis has emerged which demands the serious consideration of the medical profession, and more especially of medical practitioners engaged in panel practice.

The National Insurance Commissioners have drawn up regulations for the due administration of medical service, and medical practitioners who under the Insurance Act give medical attendance to insured persons are required to sign an agreement with Insurance Committees that they will conform to these regulations.

A medical practitioner in the Glasgow area recently contravened one of these regulations in respect of medical certificates. A complaint regarding this contravention was made to the Glasgow Burgh Insurance Committee. By the regulations such complaints stand referred to the Medical Service Sub-Committee (the statutory Committee composed of members of the Insurance Committee and of medical practitioners, with a neutral chairman), who found on evidence that the complaint was substantiated and recommended that the doctor be censured. The Insurance Committee approved of this decision, and reported the matter to the Scottish Insurance Commissioners.

Now, it is the duty of the Scottish Insurance Commissioners to make such regulations as will secure to insured persons adequate medical attendance and treatment, and unless these regulations are carried out to the letter, the Commissioners technically assume that the Insurance Committee of the area, in which the contravention has occurred, has failed to make adequate medical provision for the insured persons in that area. When the Glasgow case was reported to the Scottish Insurance Commissioners, they decided that besides the censure a monetary penalty should also be inflicted, but inasmuch as they deal with Insurance Committees and not with individuals under contract with the Committees, the Commissioners deducted the money from the sum total payable to the Committee in respect of medical service for the year in question. The Glasgow Burgh Insurance Committee represented to the Scottish Insurance Commissioners that in their view in agreement with the Medical Service Sub-Committee a sufficient punishment had been inflicted by the act of censure, but the Commissioners adhered to their decision and withheld the money.

It was left to the Glasgow Committee either to deduct a corresponding amount from the sum payable for that year to the censured practitioner, or, the penalty money having been deducted from the sum total payable to the Committee, to divide the remainder in due proportion among all the panel practitioners, thus fining all the doctors on the panel for the fault of one. Thus the extraordinary position arises, that the Scottish Insurance Commissioners can override the decisions of the Insurance Committees, and that at their discretion they may deduct any money they please from sums due to any Insurance Committee for medical service. Further, an Insurance Committee arrogates to itself the right of deciding whether monies so deducted are to be exigible from practitioners who may have committed some breach of the multitudinous regulations, or from all the doctors on the panel list, notwithstanding the fact that the regulations have been complied with and adequate medical service rendered by all but one or two.

The question must be settled whether the Scottish Insurance Commissioners have any right to inflict such a penalty.

Steps must likewise be taken to secure that medical practitioners receive the full sum to which they are entitled. In the present instance the amount at stake is small and the loss to each practitioner insignificant, but it might readily be greater. There is evidently no limit to the sum which the Commissioners might see fit to deduct, and the principle should be upheld that if a practitioner gives due service conformably to the regulations he should receive in payment the full sum due to him in terms of the Insurance Acts.

GLASGOW BURGH INSURANCE COMMITTEE AND COMMISSIONERS' DECISION.—The action of the National Insurance Commissioners in imposing a monetary penalty in a case in which the Glasgow Burgh Insurance Committee considered censure sufficient punishment on a doctor for a contravention of regulations was the subject of discussion at a meeting of the Glasgow Committee on 13th February. Mr. John Grieve, chairman, presided. The minutes of the Medical Service Sub-Committee reaffirmed a previous decision that a deduction made by the Insurance Commissioners from the Government grant in aid of medical benefit in respect of a breach of medical certification rules by a panel practitioner should not be imposed upon the doctor in question, but upon the practitioners as a whole. The committee had considered that the breach of rule was sufficiently met by censuring the doctor; but the Commissioners, it was complained in the course of the discussion, were introducing the principle that monetary penalties be imposed. The action of the Commissioners in thus over-riding the decision of the committee was considered to be undesirable. On behalf of the medical profession it was stated that the spreading of the penalty over the whole of the doctors on the panel instead of deducting it from the doctor concerned was unfair. Ultimately it was decided to adhere to the sub-committee's recommendation, and to bring the matter before the Scottish Association of Insurance Committees and members of Parliament.

RED CROSS SOCIETY: NEW WORKROOM IN GLASGOW.—The Duchess of Montrose performed the opening ceremony on 15th January in connection with the new workroom and cutting-out department under the Headquarters Organising Clothing Committee of the Scottish Branch of the Red Cross Society at 533 Sauchiehall Street, Charing Cross, Glasgow. The chair was occupied by Sir George T. Beatson, and there was a large attendance of ladies. Those on the platform included Mrs. Charles Cree and Mr. W. J. Anderson.

A comprehensive account of the work of the department was given by the Duchess of Montrose. Since the commencement of the war the department, which was organised under Mrs. Cree's able direction, with the assistance of the committee, had grown enormously, she said. At first the work chiefly consisted in keeping in touch with work parties throughout Scotland and supplying sample garments with the information as to the articles most needed. Later, in consequence of the increasing demands for clothing and comforts required for the sick and wounded soldiers, the committee was authorised by the War Executive of the Scottish Branch of the Red Cross Society to undertake large purchases of raw material in order to supply cut-out garments at cost price to work parties, which became necessary owing to the increasing cost of materials. In addition the committee also undertook the immediate supply of garments to meet any urgent requisition sent in when the stock in store happened to be exhausted. So that whereas in September, 1915, one room was set apart for the work at 30 Elmbank Crescent, it was soon found necessary to absorb six rooms in that house for the workrooms and cutting-out department. Then last autumn, as the work expanded still further, it was realised that these six rooms were no longer sufficiently large to cope with it, and it became necessary to seek for further accommodation. Accordingly the present premises were taken. They were eminently suitable in every way. To give an idea of the extent of the work of the organisation her Grace mentioned that from September, 1915, to the present date the garments cut out and despatched numbered 24,178, while those returned finished numbered 17,048. Garments were altered to the number of 9,435. Spindles of wool sent out numbered 1,521, and the number of woollen garments returned totalled 39,266. In addition to that there was the work of the boot and ward slipper department opened in January, 1917. Great credit was due to the large number of voluntary workers who cut out the garments and despatched them day after day without wearying. They all realised that the provision of clothing and comforts for sick and wounded soldiers was one of the most important parts of the Red Cross work, and they would like to thank all the ladies who devoted so much of their time to it. She had been asked to say that several experienced cutters and sewers were very much needed, and Mrs. Cree would be very glad if any members of church work parties would kindly give their assistance in that direction. Her Grace concluded by formally declaring the workroom open.

The premises were afterwards inspected by the Duchess of Montrose and other members of the party.

THE POSITION OF THE DIRECTOR-GENERAL OF MEDICAL SERVICES.—The retirement of Sir Alfred Keogh has raised anew the question of giving a seat on the Army Council to the Director-General of Medical Services. Despite the growing opinion that the Medical Services should be so directly represented, the Government have not yet seen fit to make the change, and the Adjutant-General will continue to be the immediate superior of the Medical Director-General, the latter officer attending the meetings only when he is called in an advisory capacity.

DISABILITY FROM DISEASE.—During the debate on the Man-Power Bill Sir Donald Maclean, in the course of his criticism of methods of recruiting, referred to the large proportion of pensioned soldiers who were disabled by sickness and disease, and estimated that the sickness casualties in the Army between 35 and 40 years of age were 250 per cent more than those between 28 and 35 years of age. I may supplement Sir Donald Maclean's statement with some further interesting official figures, says the London correspondent of *The Glasgow Herald*, on 21st January. Of every 1,000 officers and men of both Services pensioned up to 30th November last, 430 were disabled by wounds and injuries. Diseases accounted for 567. The remaining 3 per 1,000 were cases that had lapsed. Of wounds, leg wounds without amputation were the most numerous class, being 118 compared with 83 cases of arm wounds without amputation. The amputation figures are 28 and 16 respectively. Of the pensioners disabled by disease, 120 per 1,000 suffered from chest complaints and tuberculosis, 107 from heart disease, 59 from rheumatism, 54 from nervous disease, 21 from deafness, 9 from frostbite, and 7 from insanity. Under miscellaneous diseases

180 cases per 1,000 are recorded. From this it appears that among pensioned soldiers and sailors chest and heart troubles are responsible for considerably more than one-third of the cases of disability due to disease, and numerically produce an amount of disability not much less than that caused by leg and arm wounds.

TREATMENT OF DISABLED SERVICE MEN.—Sir Arthur Griffith-Boscawen, M.P., presided at a meeting of the Joint Institutional Committee for Scotland under the Ministry for Pensions held in the North British Station Hotel, Edinburgh, on 11th February. It was reported that the hospital at Craigend, Edinburgh, for neurasthenics would be opened for patients about 10th March. In regard to the home for epileptics, Bailie Adams reported that they intended to have the patients accommodated by the 18th inst. Lady Baxter, on behalf of the Central Area Committee, reported that convalescent homes were being opened in Perthshire and Forfarshire. The men to be sent there would be recommended by the medical referee. It was further reported that a gentleman in the neighbourhood of Edinburgh was willing to convert his house into a hospital for discharged and disabled soldiers who could not be treated in other institutions. The donor would fit up and maintain the hospital at his own expense, provided it was recognised by the Ministry of Pensions. The committee accepted the generous offer, and remitted to the South-Eastern District Committee to carry out the necessary arrangements.

THE PRINCESS LOUISE SCOTTISH HOSPITAL FOR LIMBLESS SAILORS AND SOLDIERS.—It is announced that the total subscriptions to the Scottish Hospital for Limbless Sailors and Soldiers up to 26th January, 1918, amount to £247,743, 4s. 6d. The Flag Day held throughout Scotland in May of last year realised £20,807, 19s.

BLIND SOLDIERS AS MASSEURS.—The annual meeting of the Mission to the Outdoor Blind for Glasgow and the West of Scotland was held on 31st January, under the presidency of Mr. John Edwards.

Sir George T. Beatson, K.C.B., K.B.E., said that two of the blinded soldiers had been appointed masseurs in Bellahouston Red Cross Hospital. There was a general consensus of opinion, he added, that blind masseurs had been the most useful and beneficial class they had yet had in connection with that treatment. There were classes in massage at the Western and the Royal Infirmaries. If blind soldiers could be trained there and given employment as masseurs that would provide an additional outlet for those men who had done so much for their country. The reports were approved, and office-bearers appointed.

THE ADVISORY COUNCIL ON ARTIFICIAL LIMBS.—Mr. John Hodge, M.P., has formed a Council to advise the Ministry of Pensions on matters connected with the supply of artificial limbs and appliances to disabled sailors and soldiers as follows:—Sir Charles H. Kenderdine, Chairman, Director of Artificial Limb Supplies; Surgeon-General Sir W. H. Norman, Admiralty; Surgeon-General M. W. Russell, Colonel T. Openshaw, Colonel Sir Robert Jones, Mr. E. Muirhead Little, Surgeon-General Sir William Macewen, Colonel C. W. Cathcart, Colonel W. I. de Courcey Wheeler, Lieutenant-Colonel J. Lynn Thomas, Mr. F. G. Maguire, Mr. H. E. Yarrow, Mr. D. Robinson, representing Munitions Inventions Department; Mr. W. R. Grossmith, representing British Limb-Makers' Association. Representing Overseas Dominions Medical Services—Colonel M. Maclaren, Canada; Surgeon-General Sir N. R. Howse, Australia; Lieutenant-Colonel H. T. D. Acland, New Zealand; Lieutenant-Colonel E. N. Thornton, South Africa.

ENTERTAINMENT IN AID OF RALSTON HOSPITAL.—As the result of a matinee performance given in Hengler's Circus, Glasgow, on 17th January, a sum of over £600 was added to the funds of Ralston Hospital for Paralysed Sailors and Soldiers. The circus was crowded, and among the spectators were a number of disabled men from the hospital. The arrangements were made by an influential committee, of which Mrs. Fullerton acted as convener. During an interval in the programme Lady Helen Graham, who was introduced by Sir Hector Cameron, expressed the thanks of the Scottish Branch of the Red Cross Society to Mrs. Fullerton, the committee in charge of the arrangements, Messrs. Hengler, Mr. Milne, general manager, the artistes for their services, the ladies who had sold programmes, and also to Mr James Dalrymple and Councillor Laing. As the result of all their efforts a substantial sum would be handed over to the Red Cross Society for the benefit of Ralston Hospital. The soldiers at that institution had given a great gift to their country; how great it was few people realised. It was satisfactory to know, however, that as the result of the ameliorative treatment they were receiving in the hospital they were improving from day to day and from week to week, and many of them, she hoped, would soon be patients there no longer. Referring to what Mrs. Fullerton had done for the institution, Lady Helen stated that within the past year or two she had organised entertainments which had already resulted in a sum of over £2,350 being raised for the hospital. Mrs. Fullerton was presented with a carved oak tray in recognition of her efforts. The tray, which bore an inscription, was subscribed for by the patients, and was the work of Private James Nicolson, who is at present undergoing treatment in the institution.

THE ACTION OF ALCOHOL.—Lord D'Abernon's Advisory Committee, appointed by the Central Control Board (Liquor Traffic) to consider the conditions affecting the physiological action of alcohol, has now issued a report entitled: *Alcohol, its Action on the Human Organism.* The conclusions detailed therein will not, we fear, stand close enquiry, either with regard to their nature or to the mode by which they have been reached.

When the Committee was appointed, thinking men shook their heads but waited in silence, anticipating precisely the kind of report which has appeared.

In Great Britain and Ireland there are between 30,000 and 40,000 medical men and women, and 500 times as many adult members of the lay public, holding opinions of every colour with respect to the action of alcohol on the human organism, yet this report has been based on the evidence, that is, the *opinions* in this case, of a very few individuals. In the nature of things, testimony as to *facts* could not be offered. Everyday judicial examinations are conducted by means of evidence as to *facts*, supported only by occasional expert *opinions*, but in such processes the actions of *men* are being enquired into.

To our mind, the attempt to arrive at the truth in the matter of the effects of a chemical substance upon metabolism by means of judicial enquiry by a committee is a futile proceeding.

Much discussion, we can foresee, will centre round two of the principal conclusions: "Alcohol is narcotic rather than stimulant in action," and "the person who is in the habit of taking alcohol . . . finds that it relieves the sensations of fatigue. Putting these together we take it that alcohol acts on the tired man as an anæsthetic *so far as his fatigue is concerned.*"

As bald statements these utterances appear simple enough, yet underlying them is the assumption that solution of some of the greatest problems in physiological science has been obtained.

Countless experiments, conducted with infinite labour, may in the end give us satisfactory conclusions on such a subject, but the methods of the law courts will always provide only such findings as: *A man is not stimulated by alcohol. He is narcotised into believing that he is so stimulated.*

SPRINGBURN HOSPITAL EXTENSION.—The new "Springburn" ward provided by the North British Locomotive Company (Limited) in Springburn Central Hospital, Glasgow, was formally opened on 25th January by the Duchess of Montrose, G.B.E. A large company attended the ceremony. The chair was occupied by Sir George T. Beatson, chairman of the War Executive of the Scottish Branch of the Red Cross Society, who stated that the new ward provided accommodation for over sixty beds.

Sir William Lorimer, chairman of the North British Locomotive Company, said it was a pleasure to the directors that they were able to make a further contribution to the work of the Red Cross Society. The work appealed to what they had hitherto regarded as a feeling latent in the human breast, a feeling of sympathy with suffering and pain, and a desire to restore and prolong human life and bring back shattered lives to usefulness. The Red Cross Society's record was magnificent. By sympathy and kindness and by skilful nursing and medical and surgical attention men were brought back from the very gates of death to opportunities of renewed life and further usefulness. Speaking of what had been done at that hospital for the benefit of the Red Cross Society, Sir William said that in December, 1914, they provided accommodation for 200 patients, and in September of the next year they opened a ward outside to accommodate 85 patients, in addition to a recreation room and extra accommodation for the resident staff. The common expectation, based upon current report, was that in the early spring now approaching there would be more severe fighting than had yet been experienced in the war. That being so the casualties would be greater, and they had to consider where it was possible to find further accommodation for the Red Cross. The company had built that additional ward for the use of the Society so long as they needed it, but for the sake of the suffering wounded he hoped that the Society's tenancy of it would be brief.

The Duchess of Montrose, in declaring the ward open, said on behalf of the Executive of the Scottish Branch of the Red Cross Society that they gratefully accepted that beautiful new ward which Sir William Lorimer had handed over on behalf of himself and the directors of the North British Locomotive Company. Since the first ward was opened in December, 1914, hundreds of sick and wounded soldiers had passed through the hospital. It was sad to think that after three and a half years of war there should be further need for hospital extension. They were proud of their soldiers, of their courage and endurance, and of the sacrifices they had made for the Empire. They must not forget the price they had paid for ultimate victory through wounds and loss of their lives. The measure of their sacrifice was great, and the least they could do in token of the nation's gratitude was to render them the most efficient relief that modern skill could provide.

Sir Samuel Chisholm moved a vote of thanks to Sir William Lorimer and the directors of the North British Locomotive Company for their generosity in providing the new ward.

Mr. Hugh Reid, in proposing a vote of thanks to the Duchess of Montrose, said the new ward completed the hospital under her Grace's auspices. The spirit of co-operation shown in the successful work carried through by the Red Cross Society could be adopted with advantage in other services which had to do with the prosecution of the war.

GLASGOW ROYAL INFIRMARY: ANNUAL MEETING.—The annual general meeting of qualified contributors to the Royal Infirmary was held on 11th February. Lord Provost J. W. Stewart, who presided, submitted the report of the managers, and moved its approval and adoption. He said he found that of the 10,706 patients treated during the year 3,266 were under 15 years of age, and in these days it surely was work specially of national importance that such an institution should be rescuing so many young lives from disease and from the results of accidents. Gratifying features of the financial report were that the general subscriptions had increased by £761 and that the subscriptions from employees had increased by £3,466. That must be due in some measure to the opportunity afforded representative working men of visiting the hospital and seeing for themselves the work that was being carried on. But in the result there was a deficiency on the ordinary account of £29,371, which was rather appalling. It was impossible to reduce expenditure in these times, but surely it was not impossible to increase subscriptions.

Mr. James Macfarlane, chairman of the board, who seconded, alluded to the deepened interest on the part of the working classes, and said if they could only reach the large middle-class section of the community the results would be equally satisfactory.

Mr. Timothy Warren, hon. treasurer, in supporting, suggested that the opportunity of commemorating family war losses by endowing beds was one that might increasingly be taken advantage of.

The report was adopted.

Sir James Bell, Bart., moved that the thanks of the meeting be given to the general body of subscribers, and particularly to the employees in works, warehouses, and other establishments for their continued subscriptions. He made special allusion to the increase in the contributions of the employees, although he added that he did not think the people of Glasgow and those in public works quite realised the luxury and the skill and the tender nursing that patients had at their disposal in the Royal Infirmary. He mentioned that in the year 1831 the sum of £791 was spent on milk, bread, and flour for the infirmary, whilst the sum of £680 was spent on wines, spirits, and ales. Last year the expenditure on milk, bread, and flour was £7,304, and the expenditure on wine, spirits and ale had gone down to £316.

Principal Sir Donald MacAlister, K.C.B., who seconded, said that at the Royal Infirmary there were more medical students than ever before. The steps that were taken some years ago were bearing abundant fruit, and were making the hospital one of the greatest medical schools in the country. He suggested as a means of reaching the middle classes that the parents of the medical students should be invited, as a deputation, to visit and inspect the institution. The same might be done with the relatives of the nurses, and the Merchants' House and every Incorporation in the Trades House might be asked to send a deputation. There were innumerable public societies in Glasgow who might also be invited in their corporate capacities.

The resolution was adopted.

Sir Samuel Chisholm, Bart., moved the re-election of managers. The Rev. James MacGibbon seconded, and the motion was adopted.

On the motion of Mr. John Glen, vice-chairman of the board, the Lord Provost was thanked for presiding.

GLASGOW ROYAL HOSPITAL FOR SICK CHILDREN: ANNUAL MEETING.—The Lord Provost, Mr. J. W. Stewart, presided at the annual meeting of the Royal Hospital for Sick Children, Glasgow, on 31st January. In moving the adoption of the report, his Lordship referred to what he described as the new citizenship, especially in relation to the welfare of children. After the war there would be a great social reconstruction, and out of the sufferings endured and the sacrifices made by all classes a new citizenship would arise. But even before the war ended it was surely a work of national importance to begin at once to repair the ravages of war by ensuring that the children of the country would reach a healthy and vigorous manhood and womanhood. In the course of some observations on the legislation relating to child welfare, the Lord Provost explained that the local authority would be charged with the proper care of children up to the age of five years (the school age), after which they would be looked after by the school boards. After the local authority made provisions these had to be submitted for approval to the Local Government Board. Such legislation indicated that the nation was awakening to the value of child life, which was the nation's greatest asset. He referred also to the proposed registration of nurses, which in itself was not objectionable, but he hoped that nurses engaged in such hospitals and in hospitals for mental and infectious diseases would be eligible for membership as well as those in general hospitals, where, after all, very little general training could be got. The administration of such a scheme ought in his opinion to be in the hands of an independent body, so that all interests would be protected. Dr. Middleton, who seconded, remarked that it was only now that the national conscience was awakening to the appalling death-rate among young children. The report was approved, and on the motion of Mr. P. J. Mackie it was agreed to appeal for additional support to the public, an immediate object being the raising of a sum of £7,000.

Anderston and District Health Association.—Sir William Bilsland, Bart., presided at the annual meeting of the Anderston and District Health Association, which was held in the Dispensary, Anderston Cross, Glasgow, on 12th February. Mr. Jas. T. Miller, secretary, submitted the annual report, which showed that during the year there were 4,806 attendances at the dispensary, of whom 2,729 were children. The visits to the homes of patients numbered 2,772. The financial statement was submitted by Colonel R. D. M'Ewan. The income, which included subscriptions and donations amounting to £365, 16s., was £421, 5s. 11d. At the end of the year the balance in treasurer's hands was £34, 5s. 10½d.

On the motion of the Chairman, seconded by Colonel M'Ewan, the report was adopted.

Scottish Asylum Annual Reports.—The annual general meeting of the Royal Asylum, Gartnavel, was held on 21st February. Dr. Oswald, medical superintendent, in his annual report said that among soldiers exposed to its dangers the war might be producing some new forms of nervous and mental disease, but for these ample provision was being made. In those with a tendency to such illnesses the war might bring about a condition which otherwise would not manifest itself. The prosperity enjoyed by the working classes with the restrictions on alcoholic excess, taken along with the absorbing interest, to the exclusion of all else, of the war and its problems, made for a decrease, not an increase, of lunacy. The number of cases noted as due to alcohol was the smallest recorded for many years, while those due to syphilis showed an increase. Alluding to the establishment of the scholarship for research, Dr. Oswald said it was the first of its kind in Scotland, if not in Great Britain, and its institution marked a definite advance. Glasgow was now in the unique position among university cities in this country in possessing an endowed lectureship in mental disorders (St. Mungo's College) and an endowed scholarship for research into their causes.

In his annual report, Dr. George M. Robertson, physician superintendent of the Royal Edinburgh Asylum, stated that at the beginning of 1917 the number of patients on the register was 922, and on the last day of the year it was 914. The number of admissions was 393, of discharges recovered and unrecovered 260, and of deaths 141. The number of patients admitted to the West House last year was 306. In the previous year they numbered 347, and in the year 1915 they numbered no fewer than 350, although during that year the patients from the city of Edinburgh had been admitted to the West House for eight months only out of the twelve.

As these numbers were derived from a fairly definite area, one might conclude that since the outbreak of the war the amount of insanity among the working-class population in this district had decreased. This decrease was most marked as regarded males, and in their case was mainly due to their absence on military duties. It might be assumed that the amount of insanity occurring among them was unfortunately not likely to be less than in times of peace. The strain of the war had been the exciting cause of much insanity, but the vast majority of these cases were being dealt with by the military authorities themselves. Allowing for this decrease of males, the amount of insanity among women of the working classes had not increased, but had also tended to decrease. In many cases the higher wages earned and the separation allowances regularly received must have relieved domestic worries and uncertainties.

Alcoholic excess was believed to have been the direct or exciting cause of insanity in 15½ per cent of the male admissions, This amount was slightly less than the average for the seven years before the war. In spite therefore of the increased wages earned by many working men there had been no increase in their drinking habits. That the legislative restrictions upon the sale of alcohol were to be mainly credited not only with such improvement as had taken place, but with defeating the operation of the law that increased wages were associated with an increase of drunkenness, was almost certain. With regard to women, the amount of insanity alleged to be directly due to alcoholic indulgence was under 3 per cent. That was about a third of the average amount for the seven years previous to the war, so that whatever might be the facts as regarded occasional drunkenness, there was no doubt that insanity directly due to alcohol had diminished.

ANNUAL REPORT OF THE ROYAL VICTORIA HOSPITAL TUBERCULOSIS TRUST.—The third annual report of the Royal Victoria Hospital Tuberculosis Trust states that in spite of the necessary curtailment of effort due to the continuance of the War, whose urgent demands engage public attention almost to the exclusion of other claims, the Committee of Management of the Royal Victoria Hospital Tuberculosis Trust have to report that the second year of the Trust's activity has been most fruitful.

Much work has been overtaken in the interests of tuberculous sufferers and their households throughout Scotland, and in the dissemination of instruction regarding tuberculosis and its prevention.

A leading feature of the year has been the action taken by the Committee, in negotiation with the University Authorities, towards the establishment of a Chair of Tuberculosis in the University of Edinburgh. Since the close of the period to which this report relates the Ordinance of the University Court for the foundation of the Chair has been approved by His Majesty the King by Order in Council, and a capital sum consisting of £18,896, 7s. 3d. 5 per cent. War Stock, 1929-47, has been transferred by the Trust to the University Court for the endowment of the Chair.

By the creation of a Chair of Tuberculosis in connection with the largest Medical School of the Empire, a great impetus will be given to the study of the scientific methods of prevention and cure, and to the acquisition of the necessary skill for their successful application.

During the year applications for assistance have been dealt with for the following purposes:—

(1) Towards expenses of institutional treatment.

(2) Towards improvement of accommodation for the patient and his household at home, or the removal of one or more to other quarters.

(3) Towards provision of extra clothing—bed and personal—when necessary.

(4) Towards provision of extra food supplies or invalid comforts when necessary.

(5) Assistance to breadwinner's household when he or she is in a sanatorium.

Assistance has been continued to many of the patients already sent, with the help of the Trust, for treatment to sanatoriums and other institutions throughout Scotland. The number of such patients has been considerably increased, many fresh applications having been received by the Committee. The group includes hospital nurses, students, teachers, clerks, small shopkeepers, and others, whose case is not met by the provisions of the National Health Insurance Act.

Care Committees and patients have been advised regarding suitable sanatoriums, and generous contributions have been made towards meeting the expenses. Especial attention has been directed towards securing proper sanatorium treatment *without the delay which is apt to occur.* This has been of the greatest advantage to the patients themselves, and likewise to their households through the speedy removal of a possible source of infection.

Overcrowding in the more densely populated parts of large cities and work centres is an evil which is happily beginning to receive more just attention from the public authorities. While here and there something has been done to ensure more hygienic conditions of living, there is crying need for more thoroughgoing reformation.

Pending the development of national or local schemes for better housing—which at the best will take time—much has been done by the Trust towards the better housing of families whose circumstances do not admit of sufficient accommodation for the isolation of patients under treatment at home. It is one of the particular aims of the Trust to meet the case of households compelled to live in contracted dwellings alongside of one or more cases of tuberculosis.

There are frequent instances where the chief breadwinner is laid aside by tuberculosis. He probably requires indoor treatment at a sanatorium or hospital, but hesitates to accept it from a natural anxiety as to his family's welfare during his enforced cessation from work.

By the favourable consideration of many applications in such cases, the Trust have been the means of preventing in some degree the serious consequences both to the patient and to his household, which would surely have resulted from the patient's continuance at home.

The grant from the Trust enables the sick man to go to sanatorium or hospital with an easy mind as to his family. The relief from anxiety is the best medicine for the patient, and contributes much to the chances of successful treatment.

We are of opinion that the directorate of such an important Trust should show a stronger representation of the medical profession. The present Board has a membership of sixteen, at least seven of whom have legal qualifications, whilst only one, Sir Robert Philip, practises medicine.

NEW PREPARATIONS, &c.

From Messrs. Burroughs Wellcome & Co., London.

'Wellcome' Brand Toilet Lanoline.—Although primarily intended for toilet use, 'Wellcome' Brand lanoline is also suitable as an emollient application in certain skin conditions, for which purpose it may be preferred by sensitive patients to crude preparations of wool fat. It has an agreeable odour, and rubs readily into the skin without leaving any suggestion of a viscid film. Messrs. Burroughs Wellcome & Co. issue the preparation in collapsible tubes of two sizes at 6s. and 12s. per dozen. The screw-cap is of the improved style—familiar to users of the other products issued in tubes by the firm—large, easily removed, and not readily mislaid.

REVIEWS.

Collected Papers on Circulation and Respiration. Second Series: Clinical and Experimental. By Sir T. LAUDER BRUNTON, Bart., M.D., D.Sc., F.R.S. London: Macmillan & Co., Limited. 1916. (5s. net.)

IN this volume by the late Sir Lauder Brunton is to be found a series of sixty-eight papers, of which only a few are of interest from the experimental side alone. Most of them deal with questions of practical medicine, and are therefore of interest and importance as much to the practitioner as to the research worker. By far the greater number are concerned with the heart and circulation, their symptomatology, the effects of drugs upon them, and the results of mechanical forms of treatment, such as massage and kneading of the muscles. Some are written in collaboration with other authors, and the comparatively small number of purely experimental contributions is mainly from the joint pens of Brunton and Cash. The papers vary in length from mere notes upon some practical point of treatment or comparatively unfamiliar symptom to elaborate articles upon the major aspects of disease. If none of them is so outstanding as the author's earlier researches upon digitalis and the action of the vaso-dilators in angina, they all bear evidence of his unwearying capacity for research and acute powers of observation; they are all tempered with the shrewd commonsense which was one of his distinguishing characteristics; and they all, or nearly all, have an intimate relationship to practice, and are written in the easy and attractive style which readers of Sir Lauder Brunton's works have learnt to love. They bear date from 1883 to July, 1915, his death following shortly after the publication of the volume. His work as a busy consulting physician was enough to fill most men's time, but to the end of his life he did more than one man's work. This collection of papers, constituting what is practically a memorial volume, is a worthy record of his unremitting ardour in the quest of knowledge, not for its own sake only, but for that of humanity.

Electro-Therapeutics for Military Hospitals. By WILFRED GARTON, M.R.C.S., L.R.C.P. London: H. K. Lewis & Co., Limited. 1917. (2s. 6d. net.)

THIS small book (43 pages) has been written for the purpose of obtaining greater recognition of the usefulness of electrical methods of treatment in the case of lesions which are common among soldiers in war time.

The author confines himself mainly to treatment by faradic, galvanic, and galvano-faradic currents, generated by a battery of wet Leclanché cells, which as a source of electricity he seems to consider preferable to any other. He treats of paralysis of muscles, including muscle testing, neuritis, shell-shock, and neurasthenia, fibrositis, zinc ions, and trench feet, while interspersed throughout the book a number of cases are given, which the author considers have benefited by the treatment.

The author, who is evidently an enthusiast in electrical work, might have chosen a more suitable title for his book, which, after all, is nothing more nor less in the main than a record of his personal experience in treating a number of lesions commonly found in soldiers who have undergone the rough ordeal of war.

The Conduction of the Nervous Impulse. By J. KEITH LUCAS, Sc.D., F.R.S. Revised by E. N. ADRIAN, M.B., M.R.C.P. Monographs of Physiology. London: Longmans, Green & Co. 1917. (5s. net.)

THE author of this monograph, one of the ablest experimental physiologists in this country, was killed in an aviation accident whilst carrying out some experimental work for the R.F.C. The present book was prepared for the press by Lucas's pupil and colleague, Dr. Adrian, from the very full notes which had been left.

The little volume gives a very complete account of our present knowledge, the information available being largely due to the methods which Lucas introduced, of the conduction of the nervous impulse. It is a concise and lucid statement of a very difficult field of research, a field which the author had made very definitely his own. The mode of conduction of the impulse, the nature of the refractory period, summation, apparent inhibition, the "all or none" character, the variations in transmission are all discussed. Dr. Adrian has added a most interesting chapter on central inhibition. The aim of the monograph may indeed be taken to be the correlation of the functioning of the central nerve arcs with the more simple phenomena associated with nerve-muscle preparations.

The Indian Operation of Couching for Cataract. By ROBERT HENRY ELLIOT, M.D., B.S., Sc.D., F.R.C.S.Eng., Lieut.-Colonel, I.M.S. (Retired). London: H. K. Lewis & Co., Limited. 1917. (7s. 6d. net.)

THIS volume, by a well-known operator for cataract in India, has grown out of the Hunterian Lectures which he delivered before the Royal College of Surgeons in England in February of the past year.

All British ophthalmic surgeons of that country have been impressed by the diabolical results of couching as practised by the native Indian. Lieut.-Colonel Henry Smith declared that even the best cases if followed long enough ended in absolute blindness.

Captain H. E. Drake-Brockman estimated that the coucher had no more success than 10 per cent, while Lieut.-Colonel F. P. Maynard estimated 46 per cent of successes.

The author's statistics were gathered in the Madras Eye Hospital, and were enlarged from figures supplied him by his successor, Major H. Kirkpatrick, reaching a total of 780 cases, which they have examined during the last twelve years. They found that in only 10·59 per cent was the vision $\frac{1}{3}$ and upwards; in another 11·05 per cent the vision was $\frac{1}{4}$ to $\frac{1}{10}$: in 9·64 per cent it was $\frac{1}{10}$ to $\frac{1}{50}$; and in 7·05 per cent it was a finger-count at two feet or less, the vision being taken in each case with the correct lenses.

The author, with perhaps some compassion, suggests that if a vision of $\frac{1}{10}$ and upward be considered a success, the coucher can claim 21·64 per cent: but that standard is very much under what is accepted for the extraction operation. At the same time it may be said that he shows throughout the book an endeavour to be strictly impartial, and to do what he has attempted, viz., to ascertain the real value of lens couching. He says, "After making every possible allowance for the vaidyan, the fact remains that he is a standing menace to society, and that he should be suppressed. His methods are crude, filthy, and dangerous: his results are so appalling that any one unacquainted with the ignorance and credulity of the Indian ryot would think it impossible for him to continue to exist. His impudent lying includes, not merely a grossly exaggerated statement of his own successes, but extends to the most bare-faced falsehoods as to the nature of the results obtained in European hospitals.

"It may be permissible to quote one instance, unfortunately far from a solitary one in Madras experience. Some years ago a peasant who had had a cataract removed in the Government Ophthalmic Hospital, and whose recollections of his treatment there were most kindly, returned for operation on the second eye. On the steps of a temple within a hundred yards of our operating theatre this man, who had travelled several hundred miles for aid, was induced, by a tissue of impudent lies, to sit down and submit to couching. A few days later he presented himself at the out-patient room with panophthalmitis."

A strong plea is addressed to the Indian Government for active measures against these operators. While awaiting action endeavours are being made to disseminate the knowledge through Government agencies amongst the people, and also to improve the ophthalmic medical education.

An interesting chapter is devoted to the history of couching, from which it appears that this operation was performed in very early times—the first known description of it being given by Celsus.

The Alexandrian surgeons appear to have been the first to practise ophthalmic surgery as a specialty.

Arabian operators brought the method to Europe, where it was practised until the famous French surgeon Daviel performed his first extraction in 1745.

James Ware, of London, published his treatise on cataract in 1812, and after that the older method was finally abandoned. Several good illustrations show the Indian operator at his work, and also the technique of the operation and the instruments employed.

There is a very good chapter on the pathological anatomy of couched eyes, being the portion of the book which formed the Hunterian Lectures. The author has presented his collection of fifty-four eyeballs, on which the pathological work was founded, to the museum of the Royal College of Surgeons, and the chapter has been written on the suggestion of Sir John Bland-Sutton, so as to furnish a guide to any one who cares to study the subject further. Six plates are devoted to this part of the book, and with the accompanying description portray almost every kind of damage which can be done to the eye.

A useful chapter is devoted to the diagnosis of the operations, another to the clinical phenomena or accidents which accompany the operation.

There is an interesting plate given as a frontispiece of Bartisch's operation from Albertotti.

The book has been well got up and will repay perusal.

Hygiene and Public Health. By Sir ARTHUR WHITELEGGE, K.C.B., M.D., and Sir GEORGE NEWMAN, M.D., D.P.H. Thirteenth Edition. London: Cassell & Co., Limited. 1917. (10s. 6d. net.)

THIS book has been frequently reviewed in these pages on the issue of previous editions. The fact that it has attained its thirteenth edition is of itself a proof that it has been found of much usefulness and service to many. It is unnecessary to deal now with its contents at any length, but it may be remarked that the present edition differs from former editions in that its original author has been unable on this occasion to take any share in its revision. Sir George Newman, however, has ably taken his place.

This edition has been enlarged to the extent of some 32 pages, due to the difference between new material added and old matter revised and curtailed. The new matter may be said to treat chiefly of the application of preventive methods to infant mortality, tuberculosis, venereal diseases, tropical diseases, and to industrial-welfare, military, and naval activities, and to give added interest to the book. Perhaps the most outstanding features of this book compared with others are: the full and elaborate attention which has been given to food, food dietaries, and cognate subjects, to the subject of the functions and duties of medical officers of health and sanitary inspectors, and the administrative aspects of their respective offices in different areas in England, and the full exposition of sanitary law and bye-laws and regulations. Another most helpful section is that which discusses the law relating to factories and workshops. We note, however, on p. 529 that the fee of 2s. 6d., originally paid to the practitioner for notification of a notifiable infectious disease in a private patient, has been retained. Recent enactment, however, has docked that fee to a lower figure.

A number of fresh illustrations has been added to the present edition, and there is a full index of contents and subjects.

The work continues to maintain its high standard of excellence, and will prove a most reliable *vade mecum* to all who have to study particularly the subject and to work in the department of public health.

Memoranda on Army General Hospital Administration. By VARIOUS AUTHORS. Edited by P. MITCHELL, M.D., Lieutenant-Colonel R.A.M.C. (T.F.) London: Bailliere, Tindall & Cox. 1917. (5s. net.)

THIS book is what it claims to be—a collection of memoranda on army general hospital administration—but it is mainly concerned with the administration of general hospitals in the field, although the chapters by the editor deal also with some of the problems that affect home hospitals. Lieutenant-Colonel Mitchell, in dealing with the provision of medical officers for hospitals and for the army in general, makes a strong plea that the technical and other experience of doctors should be considered when they join the army, and that, as far as possible, doctors should be fitted into posts suited to the individual.

The question of kitchens and cooks is put in a nutshell, as is also the discussion on the medical division, and these two portions of the book might well be amplified. The surgical divisicn, as one would expect, is discussed at greater length, and various suggestions regarding records to be kept and instruments and equipment to be provided are set forth. No doubt every surgeon will not agree with the individual particulars mentioned, but on the whole this memorandum is well worth consideration. A dissertation on camp sanitation follows, and a great deal of information is conveyed in a small space. Lastly, there are brief notes on clerical duties.

The book as a whole is very readable, but one has the feeling that there is not quite enough of it, and that slightly more detail and a larger discussion would be well worth while. But it is after all merely memoranda, and these, so far as they go, are very good.

Human Physiology. By Professor LUIGI LUCIANI. Translated by FRANCES A. WELBY. With a Preface by J. N. LANGLEY, F.R.S. In Five Volumes. Volume IV: The Sense Organs. Edited by GORDON M. HOLMES, M.D. London: Macmillan & Co., Limited. 1917. (21s. net.)

THE volume is fully up to, indeed it excels, the standard of the previous volume. In no other text-book available in English is so full and so interesting an account given of the special senses. Throughout it bears the impress of a single mind, the things which interested being dealt with in detail, those which did not appeal relegated to the background. It is therefore, perhaps, not a text-book for the average student, but any student who wishes to get a good insight into many of the absorbing byeways of sense physiology cannot afford to neglect this book. Each sense is dealt with in turn, some more completely than others. As it is unfortunately true that the body of English research in the special senses is not very great, it is to be regretted that Professor Luciani should have neglected some of the most valuable, like that of Head on skin sensation. (In this instance the editor has tried to make good the omission.) There is an admirable chapter on the psychological side; it is refreshing to find a physiologist who really has tried to elucidate the problems of sense.

A most interesting volume, well illustrated, and excellently translated, so well indeed that it reads like an original work.

A Manual of Practical X-Ray Work. By David Arthur, M.D., D.P.H., and John Muir, B.Sc., M.B. Second and Revised Edition. London: Wm. Heinemann. (12s. 6d. net.)

This *Manual of Practical X-Ray Work* is primarily intended for army and navy surgeons, but is also designed to meet the wants of practitioners and students as an introduction to the subject, and as a practical guide in working.

In essence and in aim the authors declare their *Manual* to be a practical one. Yet some of the illustrations are open to the criticism that they do not help the understanding of the text, as Fig. 9 and Fig. 66. Fig. 9 is intended to illustrate the position of the valve tube, but the connections are not clearly shown, and in Fig. 66 the lettering is almost indecipherable. There are also constant references to other pages in the book—in one page four such references were counted. The law that the intensity of the rays varies inversely as the square of the distance should have been illustrated by examples, and tables showing the effect of the rays on deep structures as given by Gauss and Lembeke (Roentgen, *Tiefen Therapie*) would have added to the practical value of the work.

A list of diseases which respond to *x*-ray treatment is given, but details of dosage, which is the practical point, are not given. The practical man in search of the practical point as to the dose he is to give in a case of alopecia areata finds on p. 341—"Chronic ulcers defying treatment may respond to *x*-ray exposures, which remark also applies to acne vulgaris, acne rosacea, and alopecia areata." Special attention has been given to the treatment of ringworm, but we doubt the statement that $1\frac{1}{4}$ m.a. through a tube of 5 inches diameter for three minutes at standard distance will cause epilation. Further on (p. 335) a tube is called "hard" with an alternative spark gap of 5 inches, while on referring to the table given on p. 14 it is called "medium."

The work is handy and condensed in style, and that it has reached a second edition shows that it has met a want. It is evidently written by men who have a thorough grasp of the principles and experience of *x*-ray work, but might be improved by keeping more in view the standpoint of the practical man.

Cancer: Its Cause and Treatment. By L. DUNCAN BULKLEY, A.M., M.D. Vol. II. New York: Paul B. Hoeber. 1917. ($1.50 net.)

THIS book is an amplification of the thesis of Dr. Bulkley's former volume, published two years ago and reviewed in these pages at the time. The thesis he then maintained was that cancer was primarily a constitutional rather than a local disease, that it was not therefore curable even in the majority of comparatively early cases by the use of the knife, that in the United States the mortality had increased between 1900 and 1915 by 28·7 per cent in spite of earlier diagnosis and earlier and more radical operation, that in consequence the surgical attack was to be regarded as having failed, and that more was to be expected, and had, indeed, been achieved in many cases at his hands, from constitutional measures. Although the present volume is in a sense a repetition, it is also an elaboration, of these positions. Dr. Bulkley regards cancer as due to the same class of causes as those which determine chronic affections of the kidneys, heart, and blood-vessels, as a consequence, that is, of erroneous nutrition, increasingly prevalent under the increasing strains of modern civilisation. He develops this argument at considerable length, with a mass of illuminative statistics concerning mortality and the results of surgical interference, and with an elaborate study of the excretory changes and the alterations in the blood which tend to prove that cancer is the consequence of faulty metabolism, a systemic disorder of which the tumour is but the local expression. On this view of its nature he bases his treatment, of which he gives full details. It consists in essence in a rigid vegetarian diet, with careful regulation of the patient's life, abstinence from coffee and alcohol, and appropriate medication, the drugs on which he chiefly relies being acetate of potassium, cascara, and iron. A chapter is devoted to illustrative cases, showing the results of this line of treatment in the author's hands, and some of these are certainly very striking. The difficulty which must arise in the mind of the practitioner who should be disposed to give it a trial—and for such a trial to be adequate it is necessary that Dr. Bulkley's very full directions should be carefully followed —is that in the present state of professional opinion he would be held almost criminally responsible if he did not advise operation in an early case. But there is little doubt that early operation has at least not materially diminished the mortality from cancer, and if, until further evidence of its failure is produced, it is still a duty not to deny the patient the chance it offers, there remain inoperable cases in abundance on which this alternative treatment may legitimately be tried. And the common attitude of folding one's hands in helplessness before such cases cannot be too strongly deprecated.

Elements of Anatomy and Physiology for Nurses. By PERCY M. DAWSON, M.D. New York: The Macmillan Company. 1917. (7s. 6d. net.)

THE object of the writer of this volume has been not to supply a compendium of the whole of anatomy and physiology, but to familiarise nurses with those parts of the subjects which border on their own experience. With this purpose in view, he has explained in some detail, and in terms of chemistry and physics, the more important physiological processes, and has described the more salient features of human anatomy. Such a method of exposition is undoubtedly to be preferred to the abbreviated and highly simplified presentment of the whole subject which is usually to be found in nurses' manuals. Interest in any subject grows with the completeness of its presentation, and the main fault of primers is that they are too much simplified to stimulate any interest whatsoever. An adequate exposition, even of portions of a subject, arouses the desire for more, and stimulates independent reading. Dr. Dawson has done a real service in his judicious selection and his clear interpretation of his material. Granted the requisite amount of physical and chemical knowledge—and the demands he makes in these directions are not great—nurses should find their comprehension of anatomy and physiology much aided by his clearly written book.

Emergency Surgery. By JOHN W. SLUSS, A.M., M.D. Third Edition. London: William Heinemann (Rebman, Limited). (17s. 6d. net.)

THE third edition of Mr. Sluss's *Emergency Surgery* brings this well-known American book abreast of present-day work. The author insists that his object is to guide the general practitioner "in a time of stress," and that he has written the book more for that class than for the surgeon specialist. Yet the latter is, quite properly, not above placing such works, when well written, among his books of reference. Mr. Sluss's previous editions have, no doubt, met with that treatment.

No surgical publication would now be complete without a section dealing with the military surgery of the present war, and so this author has rewritten his corresponding chapter in conformity with the experiences of this campaign.

It is to be regretted that authors do not cause prefaces and editions to be dated prominently when this, for whatever reason, has not been attended to in the proper place by publishers. In the present case the only date we can find is one (1915) attached to a small-type copyright notice. Many readers have a strong dislike for undated works, and sales are liable to suffer accordingly.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

SURGERY.

True Prostatic Calculi. By Herman L. Kretschmer (*Surgery, Gynecology, and Obstetrics*, January, 1918).—Primary prostatic calculi have their origin within the prostatic tissue. They consist in the main of phosphates, carbonates or oxalates of lime, or magnesia, or triple phosphates. Lassaigne and Dupuytren give rather different statements of composition of primary stones. These are respectively :—Calcium phosphate, 84·5 per cent ; calcium carbonate, 0·5 per cent ; organic material, 15 per cent ; and calcium phosphate, 60 per cent ; ammonio-magnesium phosphate, 20 per cent ; calcium carbonate, 20 per cent. Secondary calculi can be distinguished by their having nuclei composed of urates and earthy phosphates ; but the outer coatings of both types may be somewhat similar, hence the importance of the nuclear examination.

The author states that, with his own 8 cases, the number on record is now 173. Among many views as to the origin of primary calculi, that meeting with the approval of most experts is the theory of encrustation either of physiological prostatic albuminoid concretions or pieces of necrotic tissue. Many are agreed that the condition is preceded by infection from the urethra. The author believes that the diagnosis can be definitely established in every case by the aid of *x*-rays.

Treatment may be non-operative or operative. The former consists of removal of stones by massage or by the endoscope ; radical removal is best performed by perineal prostatotomy. In cases of recurrence some procedure must be adopted which will prevent further stone formation, and, with this end in view, it would seem logical to perform prostatectomy.

—CHARLES BENNETT.

The Prevention of Post-Anæsthetic Acidosis. By William Lee Secor (*American Journal of Surgery*, January, 1918).—Every surgeon of experience has learned to estimate the qualities of each operative case, and to make a mental note of the risk. A patient who is poorly nourished, or who has been underfed for some time, is more subject to shock and more liable to show the toxic effect of an anæsthetic than the well-nourished patient. Similarly with many patients whose nutrition prior to their entering hospital has been neglected, and who, on account of vomiting, are without food for some time after the operation. Starvation adds to the acidity of the organism. Acid intoxication is found, to some extent, after about 50 per cent of anæsthesias. The characteristic features of acidosis are excretion of acetone bodies in the urine and breath, and a marked increase in the tritrible acids in the urine. There is a great decrease in available alkalies which, when extreme, may cause coma and death. Starvation and anæsthesia occurring together in the same patient may produce alarming, or even fatal, results.

Alkalies and carbohydrates are both being used to counteract or prevent acidosis, but the former only relieves symptoms. It requires the absorption and oxidation of carbohydrates to prevent the excessive katabolism of fats and proteids. If mouth-feeding is possible, carbohydrates should be administered to within three hours of the operation. Solutions of glucose are best suited for the purpose. If mouth-feeding is contra-indicated, then glucose may be administered intravenously, by the rectum, or subcutaneously. The author uses glucose before, during, and after the operation. During the operation half a litre of 5 per cent solution is injected under each breast or into the axillæ.—CHARLES BENNETT.

Books, Pamphlets, &c., Received.

Green's Manual of Pathology and Morbid Anatomy. Twelfth edition, revised and enlarged by W. Cecil Bosanquet, M.A., M.D., and W. W. C. Topley, M.B., B.C. University Series. London: Baillière, Tindall & Cox. 1918. (18s. net.)

Chemistry for Beginners and Schoolboys, by C. T. Kingzett, F.I.C., F.C.S. Second edition. London: Baillière, Tindall & Cox. 1918. (2s. 6d. net.)

Field Sanitation, by C. G. Moor and E. A. Cooper, in collaboration with other Officers and Men of the 1st London Sanitary Company. London: Baillière, Tindall & Cox. 1918. (2s. 6d. net.)

Découverte des Vaisseaux Profonds par des Voies D'Accès Larges, par J. Fiolle et J. Delmas. Préface de M. Pierre Duval. Dessins de H. Beaufour. Technique Chirurgicale. Paris: Masson et Cie. 1917. (5 fr.)

Troubles Locomoteurs Consécutifs aux Plaies de Guerre, par Aug. Broca. Collection Horizon. Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1918. (4 fr.)

Plaies de la Plèvre et du Poumon, par R. Gregoire et A. Courcoux. Avec figures et planches hors texte. Collection Horizon. Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1917. (4 fr.)

Venereal Diseases and their Prevention, by A. Winkelried Williams, M.B., C.M., D.P.H. London: H. K. Lewis & Co., Limited. 1917. (6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 23RD FEBRUARY, 1918.

	Week ending			
	Feb. 2.	Feb. 9.	Feb. 16.	Feb. 23.
Mean temperature,	46·7°	45·2°	43·0°	42·6°
Amount of rainfall, ins.	0·24	0·94	1·15	1·92
Deaths (corrected),	310	281	248	329
Death-rates,	14·5	13·2	11·6	15·4
Zymotic death-rates,	0·5	0·9	0·6	0·9
Pulmonary death-rates,	4·4	3·6	3·6	3·8
DEATHS—				
Under 1 year,	54	40	38	71
60 years and upwards,	94	82	77	80
DEATHS FROM—				
Small-pox,	...	...	...	...
Measles,	2	6	5	8
Scarlet fever,	2	1	..	...
Diphtheria,	2	5	4	3
Whooping-cough,	4	7	3	7
Enteric fever,	..	...	...	...
Cerebro-spinal fever,	...	1	...	1
Diarrhœa (under 2 years of age),	8	1	4	5
Bronchitis, pneumonia, and pleurisy,	71	55	60	54
CASES REPORTED—				
Small-pox,	...	...	...	...
Cerebro-spinal meningitis,	3	3	3	2
Diphtheria and membranous croup,	37	25	34	35
Erysipelas,	18	12	12	21
Scarlet fever,	30	33	22	24
Typhus fever,	..	2	1	1
Enteric fever,	2	...	2	2
Phthisis,	68	51	64	71
Puerperal fever,	11	4	4	5
Measles,*	146	129	200	178
Ophthalmia neonatorum,	10	13	14	13

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *4th March*, 1918.

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ORIGINAL ARTICLES.

SYMPATHETIC OPHTHALMIA: SOME OBSERVATIONS ON ITS ETIOLOGY.

By JAMES ALEXANDER WILSON, M.D.,
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How is disease, of a particular type, transferred from one eyeball to the other? The particular type is uveitis, a disease of the vascular coat. In character it is plastic, and its histological structure consists of a peculiar cell infiltration that does not exhibit any tendency to suppurate or to caseate. In both eyes the condition is much the same. The uvea becomes converted into fibrous tissue, the eyeball softens and shrinks. The blood does not present any suggestive changes.

The disease in the eye first affected is in most cases produced by a penetrating wound made by a non-sterile object, or by the presence of a foreign body in the eyeball, but it also occasionally follows a penetrating incision made by a surgeon's sterile knife.

The condition transferred to the second eye is said to be of two kinds, sympathetic irritation and sympathetic ophthalmia. Laboured attempts have been made to draw a dividing line between these two conditions. Swanzy wrote:—"Sympathetic irritation is a true fifth nerve neurosis;" and "sympathetic ophthalmia is not a fifth nerve reflex phenomenon."[1] If sympathetic irritation is a neurosis, then the etiology of sympathetic ophthalmia may lie but a step further in the same direction, for the difference between these conditions is probably only in degree, and who can, in some cases, say where irritation ends and ophthalmia begins?

Much investigation and much experimental work has been done, with results that are contradictory in some cases, and of value mainly from the negative side in others. Various theories are advanced in explanation, thus—

1. Nerve irritation.
2. Infection carried by the optic nerves.
3. General infection through the blood-stream.
4. Anaphylaxis.

Nerve irritation may produce a reflex dilatation of the capillaries, or the mildest form of sympathetic irritation. If an organism, or a toxine, or an inflammation travels round direct from one eye to the other by the optic nerves we should expect papillitis or neuro-retinitis, but these conditions are only occasionally found; and this infrequency suggests that whatever enters the eyeball does not usually do so by the optic nerve, at least as a material something. When the second eye becomes affected in an ordinary case of sympathetic ophthalmia, removal of the first eye frequently arrests the disease in the second eye; but this is not what one would expect if the condition in the second eye was due to the presence of pathogenic organisms in that eye. Further, it is asserted, almost unanimously, that pathogenic organisms have never been found in either eye.

Suppuration in an eyeball does not produce sympathetic disease, perhaps because some necessary toxine is not evolved. Occasionally meningitis follows the enucleation of a suppurating eyeball—that is, the micro-organisms enter the severed nerve and travel up to the coverings of the brain. The organisms do not travel round to the other eye. In those cases of sympathetic disease in which there is papillitis the organism or toxines may have travelled directly by the optic nerves: but examination of the optic nerve in those eyes removed on account of the disease usually reveals little or no departure from the normal.

In sympathetic ophthalmia the blood circulating through the eye first affected, and the lymphatics draining the eye, may carry organisms, or toxines, into the general blood-stream, and these, in virtue of some affinity, may directly affect the tissues of the other eye. This seems rather a remote possibility.

The processes of anaphylaxis may yet be shown to be responsible for sympathetic disease, but at present they are obscure and the evidence inadequate and contradictory. The recognised manifestations of anaphylaxis or serum disease are very different from those of sympathetic ophthalmia, and there is no disease of the ear or kidney corresponding to sympathetic disease of the eye.

Toxæmias—such as those produced by tobacco, alcohol, quinine, &c., affect the eyes in various ways, but do not produce the condition commonly seen in sympathetic ophthalmia. On the other hand, infective conditions, both general and local, and auto-toxæmias occasionally produce uveitis. The list of these conditions now includes pyorrhœa alveolaris, diseases of the tonsils, sinuses and ears, bronchiectasis, intestinal conditions, gonorrhœa, and kidney disorders. The uveitis found in these cases may be more or less limited in its distribution, may be less destructive, and may not have the same histological structure as that found in sympathetic ophthalmia, but in a comprehensive review these cases are of interest. Do the organisms, or toxines, pass into the blood-stream and act in a selective manner on the tissues of the eyeball, or do they act primarily on the nervous system and react on the eye tissues? Do toxines pass up in the nerve sheaths and act on the nerve cells? Does the ciliary secretion play a part? The uveitis in these cases is frequently associated with paralysis of nerves—muscular and sensory—and this combination points to a nerve lesion, a neuro-toxæmia. Something underlies all cases of uveitis and probably more or less unites them.

Neuro-toxæmia, as a possible explanation of sympathetic ophthalmia, deserves further consideration. In the neuro-optical apparatus there is the peculiar anatomical arrangement that is not found elsewhere, *i.e.*, the decussation of the optic nerves, whereby nerve fibres from both eyes reach each side of the brain, forming part of the mechanism that goes to establish binocular unity. This arrangement, adapted for the transference of impressions from one side to the other, also seems to present a similar pathway for toxines.

I record the following case because it may have some bearing on the question:—

Herpes ophthalmicus, paralysis of the sixth nerve and uveitis.—Herpes ophthalmicus is an uncommon disease, but when it does occur, it may involve the cornea, and it may be associated with uveitis, and also with paralysis of the ocular muscles. In this case there was uveitis and paralysis of the sixth nerve.

A woman, aged 58 years, experienced severe pain in the left side of the forehead, which she thought was due to exposure to cold. A day or so later herpes appeared over the painful area, then she had an attack of vomiting, and this was followed by convergent squint of the left eye. When I saw her a few days later she had seven or eight small round scars above the left eye, obviously due to herpes ophthalmicus, and the left eye was turned inwards from paralysis of the external rectus muscle. The conjunctiva around the cornea was deeply reddened; the cornea was unaffected, but the iris was dull in colour; the pupil was slightly dilated and reacted sluggishly to light. The tension was slightly raised and the vision $\frac{6}{24}$. The media were cloudy, rendering a satisfactory view of the fundus impossible. The right eye was normal. After an interval of six weeks the scars on the forehead were still visible, there was some pericorneal redness, the squint was less in degree, the iris was still unhealthy, the media were still cloudy, and the prognosis was not very favourable.

The area of skin affected with herpes in this case is supplied by the supra-orbital, a branch of the ophthalmic division of the fifth nerve: the iris, ciliary body, and choroid are supplied by the lenticular ganglion. The iris and ciliary body have a rich supply of nerves, and are very sensitive.

In this case the sixth nerve, part of the ophthalmic division, and the lenticular ganglion, or its root origins, were involved—that is, one efferent nerve, one afferent nerve, and the composite lenticular ganglion. There was no lesion of the cornea to admit infection, and all these contemporaneous manifestations were almost certainly due to one and the same disturbance of the nervous system. Here, again, the suggestion is that there is a primary nerve lesion. In these cases there is usually anæsthesia of the cornea, and this implicates the long ciliary nerves and probably the Gasserian ganglion. All these manifestations may be due to lesions of the fifth and sixth nerves; but it seems improbable that lesions of nerve trunks, conducting strands, should produce these various results. Probably nerve cells in the lower centres are involved. A central lesion, probably a toxæmia, has involved an efferent nerve and produced muscular paralysis; an afferent nerve and produced herpes; and through the lenticular ganglion has produced uveitis. When a sensory nerve is cut, not only anæsthesia, but trophic changes follow, and when a motor nerve is cut, not only paralysis but atrophy of muscles is produced. These are peripheral manifestations of lesions that simply shut off the normal influence of the central nervous system. Nerve influence controls metabolism, and its withdrawal leads to deterioration and vulnerability. Perverted influence may lead to perverted metabolism.

It may be of interest in this connection to consider localised tetanus. Take two cases that have come under my observation.

1. A soldier had a tiny piece of metal driven into his shoulder, which lodged in or near his brachial plexus. There was no obvious nerve lesion, and the entrance area was scarcely visible. After an interval of two weeks the biceps, deltoid, and other shoulder muscles on the same side passed into a state of tonic spasm, and remained so night and day for seven weeks, when the spasm gradually ceased and he returned to duty.

2. Another man had two small wounds in his left foot. Again after an interval of two weeks he had pain in both thighs, and the muscles of both thighs became affected with clonic spasms. He perspired freely. The spasms lasted for nearly a week, and then passed off.

In the first case there was no suppuration and in the second very little. In tetanus the toxine is supposed to enter and pass up inside the nerve sheaths till it reaches the nerve cells, where it develops an area of congestion, and induces efferent impulses, which manifest themselves in muscular contractions.

In diphtheria the toxine also affects the nerve centres, but manifests itself in muscular paralysis. In these cases there is excess of muscular activity, or absence of muscular activity. Pneumonia and influenza are associated with herpes. In these there is organic disease of the skin. These cases show that toxine may be conveyed to the brain by nerve, or by the blood-stream. It must, I think, be admitted that central neuro-toxæmias produce peripheral manifestations in various forms, and that among these is uveitis. If so, then the necessity for the presence of pathogenic organisms in the second eye may be excluded.

Central disturbances evolve influences—apparently efferent—of an a-trophic or pernicious nature, which produce characteristic and constant types of peripheral manifestations. In sympathetic ophthalmia something from the first eye may pass up the optic nerve and tracts and reach the lower centres on both sides. What passes up the nerve and tracts may be a material something, and what returns in response may be only nerve influence, a-trophic or pernicious in character.

In the optic nerves there are efferent fibres whose function is unknown. As the optic tracts pass under the crura, some fibres leave the tracts and pass through the crura to the nuclei of the third nerves.[2] These are supposed to be afferent branches for the sphincters pupillæ and ciliary muscles. The optic nerve and the third nerve nucleus are also both connected with the upper quadrigeminal bodies.

The direct reaction of the pupil to light, the consensual reaction to light, and the reaction to accommodation, illustrate the close connection between the second and third nerves.

Gaskell describes[3] the sympathetic or involuntary nervous system as forming three divisions, with three distinct outflows of connector fibres from the central nervous system: the sacral, stimulated by acetyl-choline: the thoracico-lumbar, stimulated by adrenaline: and the cranial. One branch to the cranial division comes from the spinal cord in the thoracic area, and, like the other parts in this area, is stimulated by adrenaline. This branch passes by the long ciliary nerves to the dilator of the pupil, and, when stimulated, causes dilatation. The main outflow from the central nervous system, in the cranial division, is in the third nerve, and goes to the lenticular ganglion. Acetyl-choline does not act on the cranial division: thus the involuntary nervous system exhibits the selective action of certain substances.

The lenticular ganglion receives an efferent branch, or root, from the third nerve, an afferent branch from the ophthalmic division, and a branch from the cervical sympathetic. The ganglion gives off the short ciliary nerves. The long ciliary nerves come straight from the ophthalmic division. Excitation of the root from the third nerve, of the ganglion itself, or of the short ciliary nerves, produces contraction of the pupil and spasm of the accommodation. Excitation of the long ciliary nerves causes dilatation of the pupil, but is without influence on the ciliary muscle.[4] Sympathetic fibres "pass by the sympathetic root to the ganglion, and by the short ciliary nerves to the eyeball, and cause contraction of the blood vessels."[5] The nucleus of the third nerve is a large one, and is made up of nuclei, each of which gives origin to one of the eye muscle nerves. There is a well-defined group of small cells which is believed to give origin to the small fibres in the third nerve which terminate in the ciliary ganglion.[6]

Suppose toxines pass up the optic nerve to the commissure and then up both tracts, thence by the fibres passing through the crura and by the connections with the upper quadrigeminal bodies, to the third nerve nuclei on both sides: thence by the outflow of sympathetic connector fibres in the third nerve they may influence the lenticular ganglia on both sides.

The networks of capillaries in the choroids are controlled by the lenticular ganglia. One of the early symptoms of sympathetic ophthalmia is weakness, or paralysis, of the accommodation; thus, the only part of the third nerve involved—apart from the sympathetic fibres in it—is that in the lenticular ganglion. Some perverted action of the lenticular ganglia seems to be an important factor in the production of sympathetic ophthalmia.

Occasionally deafness is associated with sympathetic ophthalmia, and one of the explanations advanced to account for it is interesting from a neurological point of view.

Certain fibres pass along the inner margins of the optic tracts and the posterior margin of the commissure, simply from one hemisphere of the brain to the other, and connect the internal geniculate bodies of the two sides. These fibres are known as the commissure of Gudden. The fibres of the auditory nerve also end partly in the internal geniculate body, and so toxines may be conveyed to this centre by the optic nerve and Gudden's commissure.

The suggestions from these observations are that in sympathetic ophthalmia—as in tetanus—toxines pass up the nerve and reach the nerve cells. In this case from the decussation at the chiasma they reach the nerve cells on both sides of the brain, causing a central disturbance with efferent influences—as in herpes—which manifest themselves first as capillary changes and then as uveitis. Retrobulbar neuritis is recognised, and the suggestion is that here there is a deeper lesion, involving nerve cells and nerve trunks. There also follows the suggestion that the disease may be described as neurotoxic ophthalmia.

In treating these cases antidiphtheritic or normal serum is useful, and possibly prophylactic doses might also be useful. This disease is, unfortunately, still responsible for rendering some people totally blind, and many others have an injured eye removed, perhaps sometimes unnecessarily, rather than take the risk of losing the sight in both eyes. Until we know more of the pathogenic organism, ferment, or toxine, our treatment remains more or less empirical : but when it is based on greater knowledge of the etiology and nature of the disease, it may be less drastic and more successful.

REFERENCES.

[1] Swanzy. *Diseases of the Eye*, tenth edition, p. 199.
[2] Gray's *Anatomy*, p. 901.
[3] Gaskell, *The Involuntary Nervous System*, pp. 14, 24, 26, 27.
[4] Starling's *Physiology*, second edition, p. 553.
[5] *Ibid.*
[6] Gaskell, p. 137.

ANÆSTHESIA IN GENERAL PRACTICE.

BY JAMES PATON BOYD, M.B.

THE aim of this contribution is to give some suggestions to practitioners who are not giving anæsthetics regularly. I have often thought in reading the many text-books, large and small, on anæsthesia that for the most part they devote themselves too much to descriptions of complicated apparatus, and not enough to plain indications as to how anæsthetics should be given in the simplest and safest manner. Undoubtedly the ideal method is the *open method of administering ether*, as the apparatus required is simply a mask allowed to rest on a gauze face-pad, but, unfortunately, in a very considerable number of cases it is difficult, not to say almost impossible, to obtain speedy and efficient anæsthesia. On the whole, the practitioner will find that it is better to start with chloroform, but the administrator must constantly remember that he is dealing with a lethal drug which produces an overdose readily in susceptible subjects.

The apparatus requisite is some form of *mask*. It is true that in an emergency the corner of a towel drawn through a safety-pin is sufficient, but it readily gets saturated and blisters the face. Schimmelbusch's frame answers the purpose admirably, and the larger and deeper its gutter the less chance of any chloroform dripping over. As regards material with which to cover the mask, surgeon's lint, flannel, or domette is most frequently employed. Personally I prefer "sponge cloth," which retains the chloroform and does not soak through readily. Secondly, you require a *chloroform bottle*. There are innumerable varieties, but the cheap glass drop bottle obtained in any chemist's is as serviceable as many of the more elaborate devices. Lastly, a *gag and tongue forceps* are essential.

Now, suppose your patient is in the dorsal position, with head low and nothing constricting the neck or body. You proceed as follows:—Hold your mask about an inch from the patient's face. Tell him to blow away the vapour if there is any tendency to choking. Now begin to drop your chloroform, and as soon as the patient gets accustomed to it lower your mask on to the face, and continue to drop continuously till anæsthesia is attained. Levy, in an article on "Cardiac fibrillation and chloroform syncope," states "that in giving chloroform the first principles are to keep the patient *fully anæsthetised* and to make the *administration continuous.* In the induction stage the administration should not only be continuous but progressive: the strength of the vapour should be increased as rapidly as possible without distressing the patient." I quote this as I believe it to be absolutely true. If an anæsthetist pours on a few drops, then stops, and thus gives it at irregular intervals, the almost constant result is that the patient does not go under, and ends up by becoming faint with cessation of breathing and subsequent sickness. Your aim ought to be to give your chloroform in increasing quantities till the first signs of surgical anæsthesia show themselves. I want briefly to indicate what it is essential to take stock of during anæsthesia.

1. Respiration.
2. Colour and pulse.
3. Eye conditions.
4. Muscular conditions.

1. *Respiration.*—It is of the utmost importance to watch respiration from start to finish. At first there is a tendency to hold the breath. I have frequently noticed students when giving chloroform (during the early struggling stage, wherein the patient invariably holds his breath) pouring on chloroform on the mask in increasing quantities, whereas the mask ought to be removed till the patient starts breathing again; for if the breath is held for a time you are apt to get very deep inspiratory efforts on the resumption of breathing, and if your mask is soaked with chloroform you are prone, if it is suddenly absorbed into the circulation, to have the patient getting an overdose with sometimes fatal results. As anæsthesia advances you normally find the respiration becoming regular, automatic, and slightly snoring in character.

2. *The colour and pulse*, which are the guides to the state of the circulation, must have the administrator's constant attention. When a patient is put on the operating table always note the colour of the face and lips, because you have thus a guide throughout the operation and any change is immediately recognised. It is quite unnecessary to be constantly taking the pulse, but if you feel it to begin with, you can note from time to time any alteration.

3. *Eye conditions*—Of all signs which give one an idea of the stage of anæsthesia reached, the above furnish all important information. You ask the patient before applying the mask to shut the eyes. Not infrequently, quite in the early stage, a certain amount of tremulous movements of upper and lower eyelids is seen. When this passes off, test the *lid reflex* by pulling on the upper eyelid. At first directly you pull up the eyelid it closes smartly, but as anæsthesia develops the movement becomes fainter, and is ultimately abolished. Now is the time to test the *corneal reflex*. I have been often struck to observe that many trying to elicit it pull upon upper and lower eyelids and then insert the finger between the margins of the lids, and thus prevent the response of the lids. The right method is gently to brush the pulp of the middle finger over the centre of the cornea, when the contraction of the lids manifests itself.

A word of caution is necessary: do not be constantly testing this reflex, as you are apt to irritate the eye and may set up a conjunctivitis. Moistening the finger with vaseline is advised to decrease the possibility of that occurring. At anyrate, the sign should be brought out by the gentlest possible touch. This reflex becomes fainter as anæsthesia progresses. In many cases it is not essential to abolish it entirely. As the corneal reflex disappears, the movements of the eyeballs become of interest. The eyes squint in various directions, sometimes outwards or inwards, and then tend to come more towards the middle line, and not infrequently rotate downwards. Finally, the eyeballs come to be fixed in the middle line looking straight forwards.

The *pupils* at first are dilated, but as the movements of the eyeballs cease they tend to contract. At first they respond readily to light, but afterwards become steadily contracted as anæsthesia progresses. In a certain percentage of cases the pupils never contract throughout the operation, and they are always a source of anxiety, though anæsthesia may be quite efficient. When a contracted pupil dilates it is due either to too light anæsthesia or to overdosage. In making up your mind as to which it is, you have to be guided by other conditions. In a case where it is due to too light anæsthesia the respirations tend to get shallow: squinting or movement of the eyeballs and return of the corneal reflex show it to be so. In cases of overdose, pallor, absence of corneal reflex, and the eye dry and lustreless from inhibited lacrimation show the condition. There is no question, however, that if you have the slightest doubt you should withdraw your anæsthetic at once, even at the risk of vomiting ensuing from too light anæsthesia.

One more eye sign of interest is *lacrimation*. In the *British Medical Journal*, 21st June, 1913, L. T. Rutherford called attention to "the lacrymal gland in surgical anæsthesia:" and since then I have been able to corroborate his conclusions, viz., that the appearance of lacrymal secretion at the inner canthus of the eye is a constant phenomenon, and that it has a definite relationship to the depth of anæsthesia. Even after the corneal reflex is entirely abolished, you find lacrymal secretion collecting, which is an indication that if required you can push your anæsthetic, and when the pupil is dilated it gives one confidence that you are not overdosing.

4. *Muscular conditions.*—The state of the masseter muscles is most helpful during anæsthesia, because you should invariably have control of the lower jaw with your left fingers. You find that till your patient is pretty deeply under, there is more or less pulling of the jaw against your fingers, due to spasm and rigidity which disappear as anæsthesia ensues. In abdominal operations especially, where abdominal relaxation is essential, this sign is most useful to the anæsthetist.

I have, in discussing the various conditions which have to be taken account of in anæsthesia, gone over much that is already familiar to readers of this article. I wish, however, to emphasise that it is only by a due recognition of these points that we are able to obtain safe and efficient anæsthesia. No method of percentage administration, in my opinion, will ever produce perfect safety. We ought to graduate our dosage entirely by watching the various symptoms produced by chloroform, as we can never tell beforehand how any individual will behave under its influence. In text-books you have laid down hard and fast statements as to how various types of patients take anæsthetics. To a certain extent they may be true, but clinically you find that it is not till you have the patient under the influence of the anæsthetic for some time that you can gauge definitely the effects of the drug.

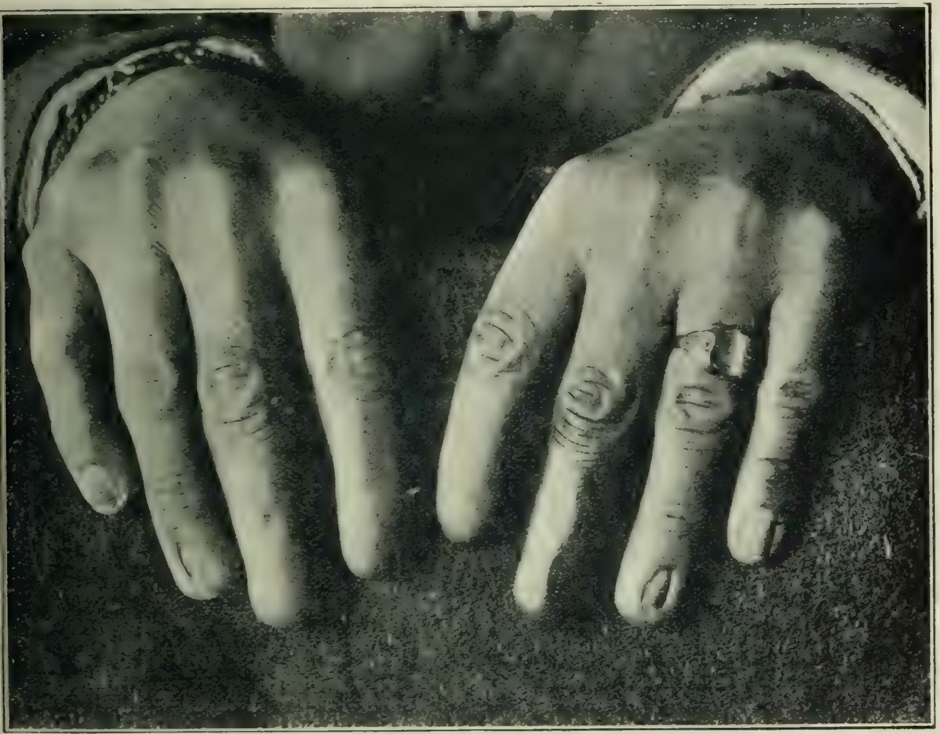
In conclusion, I wish to suggest to practitioners what I consider would promote safer anæsthesia once you have by chloroform inhalation put your patient into a state approaching what is termed surgical anæsthesia. By that I mean that the respiration is audible and regular, the corneal reflex nearly abolished, and the eyeballs fixed in the middle line with contracted pupils. You should then change to open ether. As regards an ether bottle, nothing is better than an ordinary 8-oz. dispensing bottle, into which is fitted an *Allen and Hanburys double-tubed stopper*. It is cheap and fits almost any bottle. You can commence dropping your ether on your chloroform mask, but I think it better to have another mask which is covered with two layers of surgeon's lint. You commence dropping your ether freely, thoroughly saturating your mask. Remember it is hardly possible to give an overdose with ether. If you find that the patient is tending to come out of the anæsthetic you can produce a stronger vapour by covering the mask entirely with a small folded towel some four-ply thick. You can make a small opening at the apex of the mask to pour your ether in, or covering completely turn up your mask and pour into its interior a drachm or so of the anæsthetic, and reapply from time to time. If in spite of this you find the anæsthesia getting too light, return to your chloroform mask and give chloroform till you again get the patient more deeply under. Then back again to your ether. You thus give ether as long as the patient keeps under satisfactorily, and you have chloroform in reserve if a deeper anæsthesia is desired. You will find this method of particular benefit where under chloroform your patient tends to become faint, as shown by pallor and feeble respiratory efforts. Undoubtedly, by pushing your chloroform in the majority of cases the faintness passes off, but you are apt to be obsessed with the thought that the patient is getting an overdose. The giving of ether is then perfectly safe, as it gives respiration the needed stimulus through its effect on the heart.

I have said nothing about giving chloroform and ether combined in various proportions, because it has always seemed to me far better to use them separately, so that you can, as I have indicated, give one or other as the circumstances demand.

CASE OF PARTIAL HEREDITARY ANONYCHIA.

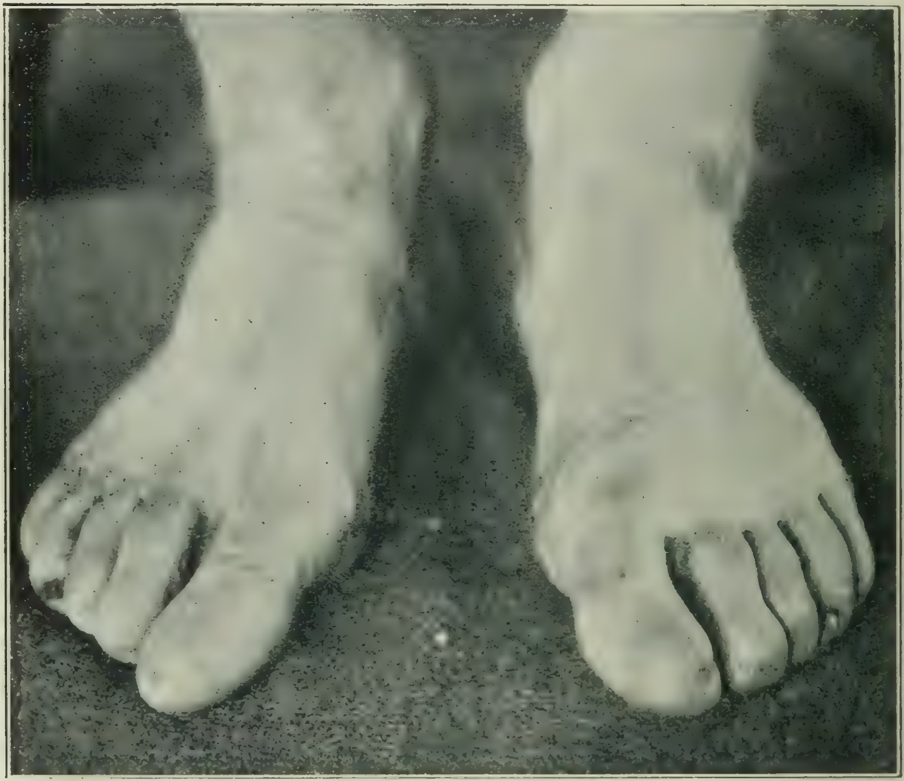
By FRANK CHARTERIS, M.D.

CONGENITAL absence of the nails is a rare condition. Heller[1] does not appear to have observed a case of this type, but refers to a few instances which have been recorded in the literature. He states that there are specimens in the Berlin and Breslau Anatomical Museums showing complete congenital absence of the nails. Wilson,[2] Petersen, and Tarnowski also record cases of complete congenital anonychia, while Ammon,[5] Eichhorst,[3] and Jacob[4] have recorded examples of partial congenital



anonychia. Jacob's case was apparently not unlike the case which I have now to put upon record, as he states that two other members of the family showed similar defects.

My patient was a man, aged 34 years, who was admitted to the Western Infirmary suffering from trench fever. It was noted that the nails of the thumbs, forefingers, and second fingers of both hands were entirely absent, and those of the ring fingers only developed as regards the ulnar half. The little fingers had complete normal nails. A similar condition was present in the toes, the three inner toes lacked nails, the fourth toe had a rudimentary nail, while the little toe was furnished with a normal nail.



The accompanying photographs indicate clearly the appearance of the hands and feet. It will be seen that while the fingers show absolutely no indication of any attempt at nail formation, in the toes there are distinct grooves indicating the nail beds. A similar grooving is illustrated in the drawing of Ammon's case of bilateral congenital absence of the nails of the big toes.

It is interesting to note that in the fingers the area normally covered by the nails showed concentric markings, similar to the markings normally present on the palmar aspects of the terminal phalanx. In the few examples of traumatic removal of the finger nail, in which I have investigated this point, a concentric marking did not appear.

The congenital absence of the nails was a hereditary defect in my patient's family. It could be traced back to his great grandmother: and of his own four children, two show the exactly similar abnormality, while the other two have normal nails. In the preceding generation only my patient showed the family defects, his brothers and sisters having normal nails.

The absence of the nails seems to cause little or no inconvenience. Previous to joining the army my patient had been a miner. Eichhorst's patient was a professional zither player.

REFERENCES.

[1] *Die Krankheiten Der Naegel*, 1900.
[2] Wilson, *Lectures on Dermatology*, 1871.
[3] Eichhorst, *Centralblatt fuer Klinische Medizin*, 1893.
[4] Jacob, *Deut. med. Wochenschr.*, 1894.
[5] Ammon, *Die Angeborenen Chirurgischen Krankheiten der Menschen*, 1842.

Obituary.

ROBERT ADAM FORSYTH, M.D., Glasg.,
Bradford.

We regret to announce the death, at the age of 70 years, of Dr. Robert Adam Forsyth, which took place at Cairnhill, Heaton Grove, Bradford, on 16th February. Dr. Forsyth graduated at Glasgow University, where he took the degrees of M.B. and C.M. in 1869, and that of M.D. in 1872. Dr. Forsyth, besides holding the post of medical officer of health for the districts of Birstall, Birkenshaw, and Drighlington, was consulting physician for Oakwell Joint Hospital and consulting surgeon for Batley District Hospital. He was also a Justice of Peace for the West Riding of Yorkshire.

JOHN FERGUSON HUTTON, M.A., M.B., Ch.B.,
Paisley.

We regret to announce the death of Dr. John Ferguson Hutton, which occurred on 26th February, at Canal Bank House, Paisley. Dr. Hutton studied at Glasgow University, where he received the degree of M.A. in 1909 and qualified in Medicine in 1913, when he graduated as M.B., Ch.B. He afterwards held the posts of house physician, casualty officer and house surgeon at the Royal Gwent Hospital, Newport, Monmouth. Soon after the outbreak of war he enlisted as a private in the Royal Fusiliers; but while under training the Brigadier became informed of his qualifications and had him appointed medical officer. He soon after received his commission, but his health gave way, and he was invalided from the service.

CURRENT TOPICS.

Appointments.—The following appointments have recently been made:—

Royal Navy (21st February): Surgeon M. J. Aitken, M.D.Glasg. (M.B., 1911), to *Foresight.*

Royal Army Medical Corps (16th February): To be Lieutenant—W. M. Kerr, M.D.Glasg. (1917), from Glasgow University O.T.C.: W. H. Wallace, M.B.Glasg. (1917), from Glasgow University O.T.C.

20th February: Volunteer Force, City of Glasgow Medical Corps—Lieutenant S. J. Moore, M.B., B.S.Glasg. (1901), late R.A.M.C., to be temporary Captain.

21st February: Major (temporary Lieutenant-Colonel) G. S. Jackson, M.D.Glasg. (M.B., 1890), Northumberland Fusiliers (T.F.), to be temporary Lieutenant-Colonel; temporary Major E. P. Cathcart, M.D.Glasg. D.Sc. (M.B., 1900), to be temporary Lieutenant-Colonel while specially employed.

22nd February: Among the officers repatriated and arrived in Holland for transfer to England is Lieutenant-Colonel H. C. D. Rankin, M.B., Ch.B.Glasg. (1911), who served as a surgeon with the Scottish Unit of British Red Cross Society during the Balkan War, 1912-13.

28th February: Army Medical Service—Surgeon-General Sir W. Babtie, V.C., K.C.M.G., C.B., M.B.Glasg. (1880), ranking as Major-General, to be Major-General, with effect from date of his appointment as Surgeon-General. *Territorial Force, R.A.M.C.:* Captain A. Leggat, D.S.O., M.B.Glasg. (1905), is seconded whilst holding an appointment as Deputy Assistant Director of Medical Services.

South African College: Medical Chairs for Glasgow Graduates.—Appointments have now been made to three medical chairs recently instituted in the South African College, Cape Town. To two of these Glasgow graduates have been elected, namely, Dr. W. Blair M. Martin to the Chair of Pathology, and Dr. Thomas J. Mackie to the Chair of Bacteriology.

Dr. Martin was educated at Allan Glen's School and at Glasgow University. At the latter he gained many distinctions, including the Junior and Senior Arnott Prizes and the Lorimer Bursary, and he graduated M.B., Ch.B. with honours in 1905. With the exception of six months during which he was resident physician with the late Professor Gemmell in the Western Infirmary, Dr. Martin has devoted all his time since graduation to pathological and bacteriological work. He held in succession the Joseph Coats Memorial Scholarship in Pathology, a Carnegie Scholarship, and a Carnegie Fellowship, and carried out research in the Pathological Institute of the University and Western Infirmary. In 1910 Dr. Martin obtained the degree of M.D. with honours, being awarded a Bellahouston Gold Medal for his thesis, and in the following year gained the Struthers Gold Medal and Prize for a research in anatomy. He was appointed Lecturer in Bacteriology in the University in 1911, and afterwards Pathologist to the Royal Hospital for Sick Children. Last year Dr. Martin received a commission in the R.A.M.C., and he has since carried on his special work in Egypt and Palestine. He has published important papers on pathological and bacteriological subjects, which mark him as an able investigator.

Dr. Mackie was educated at Hamilton Academy and at Glasgow University. As a student of medicine he won many honours, and he graduated M.B., Ch.B. in 1910, when he gained the Brunton Memorial Prize awarded to the most distinguished graduate of the year. He held clinical posts for a year in the Western Infirmary, and then devoted himself to research in bacteriology. Like Dr. Martin, he held successively the Joseph Coats Memorial Scholarship in Pathology, a Carnegie Scholarship, and a Carnegie Fellowship, the last of which he resigned in 1914 on his appointment as Assistant in Bacteriology in the Bland-Sutton Institute of Pathology at Middlesex Hospital, London, of which Dr. Carl Browning, also a Glasgow graduate, is the director. Dr. Mackie was mobilised as an officer in the R.A.M.C. at the beginning of the war, and a year later was appointed for special work to the Central Bacteriological Laboratory at Alexandria. He has published the results of valuable work, especially in connection with typhoid, dysentery, and cholera, and these have received high recognition amongst bacteriologists.

GLASGOW MATERNITY HOSPITAL.—Dr. W. F. Hewitt, of Chicago, contributes a short account to *Surgery, Gynecology, and Obstetrics* (February 1918) of the work being done in the Glasgow Royal Maternity and Woman's Hospital in 1916. The article, which is technical, and deals with the various methods employed in several conditions, is highly laudatory throughout.

PLAN TO CONSERVE INFANT LIFE.—The news from America shows that a huge national campaign will soon be commenced with a view to reducing the mortality among infants and young children.

A nation-wide weighing and measurement of all babies and children of pre-school age will begin on 6th April, to be followed up by an educational campaign, which, it is hoped, will result in reducing by at least one-third the annual total of 300,000 preventable deaths of children under five years of age.

The physical examinations will constitute the most comprehensive stocktaking of human resources ever attempted in that country in the direction of conserving life. Recent Army examinations have revealed numerous physical defects attributable to ailments that might have been cured in infancy, and the plans contemplate various methods following the examination of the children, whereby the nation's standard of manhood may be elevated. Among these are:—Immediate registration of every child born, nursing, proper medical skill whenever the family income is insufficient, pre-natal and post-natal care for every mother, clinics where children may be treated under the best circumstances, organisation of bureaux of child hygiene throughout the country, and official supervision of the milk supply.

MEDICAL INSPECTION OF SCHOOL CHILDREN.—It will be of interest to some of our readers to notice from the following report of the Supervising School Medical Officer for Dumbartonshire, that the shortage of medical men seems to be inducing the local authorities to ask the Education Committee to extend the advantages of the school clinics to children under school age.

Dr. Thomas Lauder Thomson, Supervising Medical Officer for Dumbartonshire, has submitted to the Secondary Education Committee the annual report on the medical inspection of school children in the county. The figures show a slight but distinct improvement relating to cleanliness and verminous conditions, and it is gratifying to hear from the headmasters that the standard of cleanliness is undoubtedly higher than in previous years. The scheme of treatment passed by the committee and approved by the Department has been somewhat hampered by the difficulty in obtaining skilled medical men for some of the centres. There is every possibility that in the near future the Secondary Education Committee will be asked by the various local authorities to make their clinics available for children under school age, and there is no doubt that co-operation of this kind would be of great service to the community.

ELSIE INGLIS MEMORIAL.—We notice with much pleasure that it is intended to open a fund to commemorate the work of the late Dr. Elsie Inglis. The special objects selected are—

1. The Dr. Elsie Inglis memorial hospital, to be established in Serbia after the war by the Scottish Women's Hospitals as a General Hospital and Training School for Serbian Nurses, and the maintenance during the war of the Elsie Inglis Hospital for Serbs in France.

A promising beginning has already been made towards the establishment of this object, viz., the Hospital for Serbians, as the King and Queen inspected the Elsie Inglis Unit of the Scottish Women's Hospitals on its departure for the Eastern Front. The 25 members of the Unit are women, and include Dr. Annette Benson as chief medical officer, with Dr. Lilian Chesney and Dr. Gladys Ward as assistant medical officers. The Unit is designed to serve a mobile hospital of 100 beds, and will be accompanied by a transport corps and eight motor ambulances.

2. The development and endowment of the Hospice, High Street, Edinburgh, founded by Dr. Inglis, in future to bear her name, and to become the Elsie Inglis Memorial, a training centre for women medical students in maternity and infant welfare.

Edinburgh is thus likely to add another memorial to those she already possesses to perpetuate the memory of her medical women.

To the late Dr. Elsie Inglis seem especially applicable the lines of one of our war poets:—

> "They shall grow not old, as we that are left grow old:
> Age shall not weary them, nor the years condemn.
> At the going down of the sun and in the morning
> We will remember them."

RAILWAY AMBULANCE WORK.—The presentation of certificates and medallions gained by members of St. Enoch ambulance class, Glasgow, took place on 3rd March in the tea-room at the station. Mr. David Cooper, general manager of the Glasgow and South-Western Railway Company, who presided, impressed on the members of the class the desirability of regular attendance, strict attention to the lectures, and the importance of studying carefully the subjects of the lectures. The class had been a very successful one, the whole of the members coming forward for examination getting either certificates or medallions. They had now in the Glasgow and South-Western brigade over 2,000 ambulance students, and these were increasing annually. A knowledge of ambulance work was an excellent thing for railway employees to possess. Mr. Gilmour, stationmaster at St. Enoch Station, described the progress which had been made by the class since its formation, and spoke of the difficulty of keeping up the numbers owing to so many of the young men being on service. He mentioned that 50 former members of the class were on service, and he welcomed one of them, Captain John Cooper, son of the general manager, who was present. The certificates and medallions were presented by Mrs. Cooper. Miss Florence Greatrex, who was conductor in the dining car of the train that was in the accident at Lazenby in January, was presented with a gold and peridot brooch. Miss Greatrex was a member of the class. The trophy and prizes were also presented to the winning team.

THE AILMENTS OF FLYING MEN.—Sir Watson Cheyne, in taking part in a discussion in Parliament on the Aviation Department, pleaded for a special medical service for the Air

Force. He discussed in some detail the effects of varying degrees of atmospheric pressure and density on the heart and lungs and also on the nervous system, and pointed out that the human mechanism was intended for life on the earth and not in the air. For the new service, he said, highly trained doctors were needed of better quality than for the army or navy. These doctors would have the airmen under constant observation, and be able to reject the man whose heart or lungs were faulty. Sir Watson argued that the work demanded the whole time and energy of the medical staff, who should be assured of the opportunity permanently to pursue their studies. At present they could only use the doctors allowed them by the army and navy, but, meanwhile, they could have medical men in training for the Air Force. He was told that when an aviator was killed and his machine smashed, the expense was £5,000. By saving a hundred pilots' lives they would have a sum which would pay for a special Air Medical Service, which must come, because the Air Service was not to be demobilised at the end of the war.

HOSPITAL FOR NEURASTHENIC SOLDIERS.—Every medical man who has had any, even a slight, experience in dealing with the military victims of the war, must have felt that the soldiers suffering from shell-shock were among the most unfortunate. Although suffering severely from injuries received in battle, they are without the satisfaction of being able to show their wounds, nor can they in the future boast of their scars. What is more serious, is that hitherto there has been a very great want of accommodation for such cases in hospitals really suitable for their treatment, and it has long been felt that general hospitals are very far from being suitable. With regard to cases of minor severity, it has been found that allowing them to live at home with their relatives does not tend to recovery so much as was at first hoped. It would seem that the sympathy they receive there—perhaps because superabundant or ill-directed—does not help to strengthen their self-control or to encourage self-confidence.

For these reasons medical men in Scotland will welcome the Scottish National Neurasthenic Hospital, which was opened on Saturday, 9th March, by Sir Arthur Griffith Boscawen, M.P., Parliamentary Secretary to the Ministry of Pensions. Craigend Park, a beautifully situated mansion house just outside of Edinburgh, has been taken over for the purpose of this Hospital, and, as Bailie Adams indicated at the opening ceremony, the original house would accommodate 30 patients while other 30 would be housed in a ward at present being built.

Sir Arthur Griffith Boscawen, who was introduced by the Lord Provost, said people who criticised the Ministry of Pensions did not always realise the vastness of their task. They had 1,200,000 disabled men, widows, and dependants on their books. The number grew at the rate of 18,000 a week, and every case had to be investigated. The wonder was the small number of mistakes they did make. But a greater and more important task was the after-care of the disabled men, their treatment and training, and finding for them employment not of the blind alley character. To induce men to undergo treatment they paid pensions and allowances to their families while the treatment continued. Among the cases requiring further treatment after discharge none were more pathetic or more difficult to handle than these poor shell-shock soldiers. It would have been a public scandal to have allowed them to wander about the country: so they started these homes of recovery, and they hoped this institution would be able to do for Scottish soldiers what the English institutions had done for their English soldiers. He had great pleasure in declaring the hospital open.

ALCOHOL AND INSANITY.—At the annual meeting of the Royal Edinburgh Asylum for the Insane, which was held on 25th February, Dr. George M. Robertson, the physician-superintendent, in his annual report, showed that the number of patients admitted had decreased as compared with former years. In commenting upon this fact he said that as these numbers were derived from a fairly definite area, one might conclude that since the outbreak of the war the amount of insanity among the working-class population in this district had decreased. This decrease was most marked as regarded males, and in their case was mainly due to their absence on military duties. It might be assumed that the amount of insanity occurring among them was unfortunately not likely to be less than in times of peace. The strain of the war had been the exciting cause of much insanity, but the vast majority of these cases were being dealt with by the military authorities themselves. Allowing for this decrease of males, the amount of insanity among women of the working classes had not increased, but had also tended to decrease. In many cases the higher wages earned and the separation allowances regularly received must have relieved domestic worries and uncertainties.

Alcoholic excess was believed to have been the direct or exciting cause of insanity in 15½ per cent of the male admissions. This amount was slightly less than the average for the seven years before the war. In spite therefore of the increased wages earned by many working men there had been no increase in their drinking habits. That the legislative restrictions upon the sale of alcohol were to be mainly credited not only with such improvement as had taken place, but with defeating the operation of the law that increased wages were associated with an increase of drunkenness, was almost certain. With regard to women, the amount of insanity alleged to be directly due to alcoholic indulgence was under 3 per cent. That was about a third of the average amount for the seven years previous to the war, so that whatever might be the facts as regarded occasional drunkenness, there was no doubt that insanity directly due to alcohol had diminished.

Medical men were agreed that the favourable period for treating mental disorder was the earliest stage, when it was undesirable, and often impossible, to send the patient to an asylum. The public also were getting rebellious in spirit, and growing more averse to sending persons suffering from short and recoverable attacks of insanity to asylums, as thereby not only did a certain stigma, unjust though it be, attach to them, but they also required to be legally certified as lunatics. The proposal which had therefore been favoured, as conferring the greatest public benefit, was the provision of nursing homes. The insight gained by the present war had been most striking in relation to functional disorders of the nervous system. It had established the fact on impregnable foundations that the mind, especially when the highest functions of the will were exhausted and fatigued, not necessarily by shell shock, but also by war strain, was capable of automatically and involuntarily exerting almost unlimited powers over the actions of the individual and the functions of the body. The report was approved.

Medical Education.—Several important decisions affecting medical education in Edinburgh University were confirmed at an adjourned meeting of the General Council held on 13th March, when the Principal, Sir Alfred J. Ewing, presided. The Senatus recommended in regard to the introduction into the medical curriculum of the subject of tuberculosis that the course be obligatory in the medical curriculum for the degrees of M.B., Ch.B. as from October, 1918, and that the course should consist of lectures and practical instruction. The Council approved of the recommendation.

Professor Lorrain Smith proposed that the Council approve of the draft ordinance for the foundation of a Chair of Therapeutics in commemoration of the eminent services rendered to the cause of medicine by the late Sir Robert Christison. There had been an opinion in medical circles for some time that the subjects in materia medica were too comprehensive for one systematic course, and it was now decided by the Court that when the Chair of Materia Medica fell vacant the subject of therapeutics should become a separate graduation course and form the work of a new chair. The draft ordinance was agreed to.

Another important decision come to was regarding the draft ordinance on regulations concerning admission to Scottish Universities for the purposes of graduation. Mr. R. Dickson, who submitted the report of the sub-committee, said that they welcomed the ordinance because for the first time it co-ordinated the educational test for admission to the Universities with the national system of leaving certificates for secondary schools, and on conditions which fully safeguarded the freedom of the Universities. The ordinance provided for the establishment of a Scottish Universities Entrance Board, which would decide all questions of entrance. The Chairman explained the genesis of the movement, and said that it was due to Lord Haldane that this remarkable and prompt unanimity of the Universities had been reached. Dr. Morgan said that it provided a revolution in education, and was the beginning of the end of externalism. They would now look at the length and character of the student's course of education rather than to an examination. Principal Laurie remarked that under the Education Bill there would be new types of students knocking at the doors of the Universities, and these could not be turned away. The draft ordinance was approved.

SURGEON PROBATIONERS.—The arrangements that are found necessary in order to keep supplied the medical services in the navy and army make rather an interesting study in social economics. In the earlier days of the war the military authorities allowed the senior students to remain at their classes while they called up the students who were at a less advanced stage in their studies, if they were found physically fit. At that time, doubtless, it was the belief of the military experts that only the senior students would be at all likely to be available as fully qualified medical men before the war was brought to a close. Unexpected events have shown that too sanguine a view had been taken of the situation, and during last year it became evident that some rearrangement was urgently required. The senior students had now qualified and were swept into the army as medical officers, but clearly the supply of young qualified men could not continue, as their juniors were already in the service as combatants, yet there was every indication that hostilities were likely to be prolonged. Under these circumstances the authorities have released all junior medical students who have already passed the first professional examination in order that they may resume their studies and help to keep up the supply of medical men so urgently required. In the navy, on the other hand, medical students have been doing exceedingly useful work in the smaller vessels attached to the fleet. The surgeon probationers attend to casualties occurring in their vessels until these can be transferred to a hospital ship or to a hospital on shore. They thus economise the services of the regular surgeon, and do a great deal to relieve the strain on the medical service. That the services of these surgeon probationers have been recognised and valued by the navy is evidenced by the references to their work in despatches. Like their comrades in the army, the surgeon probationers are now being released to resume their studies, and in order that their places may be filled the naval authorities now invite applications for these posts from students in their third year who have already passed the second professional examination, or hope to do so in March.

The Dean of the Faculty of Medicine of Edinburgh University, in speaking of the return of medical students from service, remarked that their experiences on service would prove very valuable to them in their future careers as medical men; that their service had thrown responsibilities on them at an early age, and had given them confidence in themselves; and the fact that they had lived among officers and men of different classes, different trainings, and professions must have given them an educational experience of great value.

WHAT SCIENCE MAY DO.—In an address on "Science for Life," delivered in the Christian Institute, Glasgow, on 23rd February, to the Science Teachers' Association, Professor J. Arthur Thomson, of Aberdeen University, said that our age was marked by two strong tendencies—the democratic and the scientific. It was certain that secure progress in the years ahead would in part depend on increased interaction between these two powerful tendencies—that democratic movements become better informed and more thoroughly imbued with the scientific spirit, and that scientific interests be increasingly socialised and directed towards the relief of man's estate. His thesis was that science could do far more for human life than it had hitherto been allowed or asked to do. It did not seem too much to say that when man cared enough he could sweep most microbic or parasitic diseases off the board. A few years ago zoologists were laughed at who solemnly counted the hairs on the backs of flies and quarrelled over the specific distinctions between one gnat and another. And could there be for able-minded men a waste of time more scandalous than cutting sections of the entrails of ticks? Yet it was this sort of knowledge of flies and gnats and ticks that had made it possible to open up Tropical Africa and complete the Panama Canal. The lesson of history was clear; if any really big change was to come about along any line, it was likely to be through discoveries in pure science, and the priceless people were those who had brains enough to be discoverers in pure science. Science could bring about great amelioration in the domain of things, in the realm of organisms, and even in the kingdom of man. The hope was that action would be increasingly based on scientific facts, and that the habit of mind which insisted on this would spread.

FOOD FOR THOUGHT.—In *Land and Water* of 7th March there has appeared an amusing criticism under the title of "Food for Thought," from the pen of "Charles Mercier," on the controversy on pig-breeding which was carried on in the *Times* and which has spread, as he says, to the *British Medical Journal*. The controversy is as to whether pig-breeding is or is not desirable in the present restricted condition of our food supply.

In the first place the arguments are given by the critic thus:—"A committee of the Royal Society has proclaimed that to keep the average man in active work the minimum ration necessary is protein, 100 grammes (3½ oz.): fat, 100 grammes (3½ oz.): and carbohydrates, 500 grammes (rather more than 1 lb). The allowance of meat prescribed by the Food Controller is sufficient, when supplemented by the protein in pulses, beans, and cereals to provide the necessary minimum of protein. The pulses and cereals, of which there is no serious shortage at present, furnish the carbohydrates (starch and sugar), but there is a deficiency in fat, an ingredient the want of which is felt acutely. The problem is, how are we to provide the necessary fat?

The answer of Mr. C. B. Fisher is, "Breed pigs, for pig-breeding is the quickest and most profitable way of producing fats." To this the Royal Society's committee answers, "Breed no pigs, for pigs consume 7 lb. of barley meal in producing 1 lb. of fat, and this is wasteful. Far better let us human beings consume the 7 lb. of barley meal than give it to the pigs and get only 1 lb. of fat in return. If we give the barley meal to pigs we are wasting 6 lb. of food out of every 7."

Mr. Mercier then proceeds thus—"The answer seems conclusive enough—if we do not think. But a little thinking, such as the committee of the Royal Society omitted to bestow upon it, puts a different complexion on it. What we are short of is not cereals, of which barley is one, but fats: and though pigs can easily turn 7 lb of barley meal into 1 lb. of fat it does not follow that human beings can do so. Common observation shows that men differ very widely, indeed, in their capability of transposing food into fat. Some men grow fat on a very moderate diet; others could not transform a cwt. of barley meal into 1 lb. of fat: and if they could they would have to do for themselves, at a certain cost of energy, what the pig does for them at a much less cost of energy. In short, the pig cooks our barley meal into fat for us; and if we consume the barley meal ourselves, we must do our own cooking; and some of us have no skill in this kind of cooking, and cannot cook the barley meal into fat; and even those who do possess the skill still have to do the cooking, and so expend energy that might be more usefully employed.

"What a man wants is not barley meal that he can turn into fat, but fat itself, ready made: and when he is eating his 7 lb. of barley meal he is not eating 1 lb. of fat, he is eating only 2 oz. of fat, for that is all the fat 7 lb. of barley meals contains. The rest of the fat needed he must make for himself, and if it is wasteful for the pig to turn 7 lb. of barley meal into 1 lb. of fat, is it not equally wasteful for a man to turn 7 lb. of meal into less than 1 lb. of fat?"

The writer then considers the agricultural value of pig manure, a subject which seems to be a little bit away from the point, but later on he says—"Professor Starling and the *British Medical Journal* take the *Times* to task for aspersing the fair fame of science by saying, Scientific calculations about food are a very untrustworthy guide to practice, because the data on which they are based are quite inadequate to justify the conclusions drawn from them;" but in this case it seems that the *Times* is not so very far astray. It would have been more accurate, however, if it had said instead of 'scientific calculations,' 'the calculations of men of science.' As, in a humble way, a would be scientific man myself, I should be the last to cast aspersions on science or on scientific calculations, but the mischief is that the calculations of men devoted to science are not always scientific calculations. It is because science is nothing but practical experience that it cannot afford to neglect practical experience, the practical experience of the cook and the farmer, as well as of the physiologist."

The plain man in the street is naturally timid about expressing any opinion on a controversy between such doughty protagonists, and can only bewail the fact that the argument has not led to much enlightenment, so far as he is concerned, as to whether pig-breeding is or is not advisable in the present conditions as regards food supply, and he would like to feel satisfied that all points have received full and unbiased consideration. He is quite prepared to believe that feeding pigs on barley meal is wasteful, but then he has been under the impression that the pigs could be fed and fattened on the unavoidable waste of kitchens, &c., and that therein lay the economy of pig-keeping. Then, as he has been told that he receives his rations not that he may grow fat, but that he may live and work, the necessity for him to transform barley meal into fat in his own inner laboratory is not quite obvious.

CAMPAIGN AGAINST VENEREAL DISEASE: EVOLUTION OF SEX.—A series of lectures arranged by the Glasgow and West of Scotland Branch of the National Council for Combating Venereal Diseases was inaugurated on the evening of Tuesday, 15th February, by Professor F. O. Bower, Glasgow University, who delivered a lecture on the "Evolution of sex in plants" before a very large audience in the Masonic Hall, West Regent Street, Glasgow. Principal Sir Donald MacAlister, K.C.B., in his introductory remarks from the chair, said that the State had at length come to the decision that it must lend a hand in the effort to save the rising generation from disease and death. The civic authorities had accordingly been charged with new duties and powers. They were charged with new responsibilites in the treatment of maladies that had in the past been allowed to ravage the population unchecked. These authorities were realising that their efforts would be more successful the more enlightened the community was as to the facts underlying the problem. Professor Bower said it was probable that both animals and plants sprang from primitive organisms living in water. The divergence of the animal from the vegetable kingdom was dictated by nutrition, the plants forming their own supply from inorganic sources, while animals take their organic supply ready made. Sex was a fact relating to both kingdoms, with regard to which there were many analogies between animals and plants. Certain terms were applicable to both kingdoms, viz., the cell or structural unit consisting of protoplasm and a nucleus; gamete, a sexual cell; zygote, the result of fusion of sexual cells; spermatozoid or microgamete, the male sexual cell; ovum or macrogamete, the female sexual cell. Sexual reproduction consisted in the fusion of sexual cells which initiated a new individual. The fact that similar terms were applicable to both showed the essential similarity in the two kingdoms. Although Aristole recognised analogies between animals and plants in their methods of propagation, it was not until the seventeenth century that sexuality in plants was experimentally demonstrated, and only in recent decades have the details been observed.

The lecturer, by means of a series of lantern illustrations, traced the evolution of sex in plants, showing specimens exemplying the various forms of multiplication.

The second lecture was delivered on the evening of Friday, 22nd February, by Professor F. O. Bower. It was originally intended that the lectures should be given in the Masonic Hall, 100 West Regent Street, but it was found that the accommodation was insufficient for the large number who attended the opening address at that hall. Accordingly, in the interval, it was decided that the meeting-place should be the Queen's Rooms, Clifton Street, and there was again a large attendance. Dr. Ebenezer Duncan, President of the Faculty of Physicians and Surgeons, occupied the chair.

Professor Bower, whose subject was "The effects of fixity of position upon sexuality in plants," recalled that in his first lecture he had inquired into the origin of sex in plants and the differentiation of the male and female cells. The next step, he said, is to consider how the external circumstances of life affect the coalescence of the sexual cells. There is one essential point which complicates the problem—that is, the advantage which comes by intercrossing. Darwin laid down as his conclusion from wide experiment "that cross-fertilisation is generally beneficial, and self-fertilisation injurious, to the offspring." Thus the problem is not merely to secure a fusion of sexual cells but a fusion of such cells from distinct sources. But those sources must not be too distinct, otherwise there is no offspring at all, or the offspring is itself sterile, like the mule. A further difficulty lies in the fact that plants themselves are not mobile, but are fixed where they grow. They cannot, like animals, seek their mate, but for the most part they depend upon external agents for bringing the gametes together. In plants that live, as the earlier types mostly did, in water, the motility of the gametes sufficed. Their movements are not at haphazard. In certain cases it has been shown that spermatozoids are guided by soluble substances that diffuse from the egg into the water in which the gametes move. The motile gamete swims towards the centre of diffusion. It is probably in this way that the fusion of gametes from distinct sources comes about. In ferns it has been experimentally shown that the movements of the spermatozoids are thus controlled, and soluble malates have been found to be the effective agents. But in immobile, land-living plants, where external water is not always available, the problem is more complicated. They must carefully protect their sexual cells against the iujurious effect of light or of drying up, and the female cell must be in a position favourable for nourishment of the embryo after fertilisation. The mechanical problem is for them a critical one. It is solved, in the first place, by retaining the female cell deeply sunk in the tissues of the parent plant, while the male cell is derived from a small detachable body called pollen-grain. The grain is protected by a corky wall, and its usually yellow colour sifts out the injurious rays of light. This grain must then be transferred to the organ containing the female cell—that is the pistil of the flower. The transfer is effected by natural agencies, such as wind, water, or occasionally by mechanical ejection. But most commonly it is carried by mobile animals, chiefly insects, which are lured by scent and colour to the baits of honey and pollen, which serve as their food. Their action in carrying the pollen is unconscious and involuntary. Once landed on the receptive stigma the pollen-grain germinates to form a tube, which penetrates to the ovule, where the egg is hidden away. The growth of the pollen-tube is not at haphazard. If it be germinated in a sugar solution the tube is found to curve away from free atmospheric air —it will grow along a moist surface, it will make its way directly towards the tissue of the pistil of its own species. These facts suffice to give some explanation of the way it grows into the tissue of the pistil, and finally makes its way to the egg. There the male cell or gamete, which has been matured within the tube, is extruded into the ovum. The actual fusion is like that seen in cases where the mechanism is much simpler.

By such means not only is fertilisation effected in seed-bearing plants but a high probability, and in some cases a certainty, of a cross is secured. The study of flowers as pollinating mechanisms has caught the public attention. The facts are sometimes presented in senational language. Floral mechanisms are certainly wonderful instances of adaptation. But in studying them it should always be remembered that it is the immobility of the plant that makes these shifts necessary. Plants were originally aquatic organisms. Their spread to land raised a thousand difficult life problems. One of the most urgent was how to maintain sexual reproduction under conditions distinctly adverse. The solution of the problem is found, worked out in a thousand ways, in the varying structure of the flower, which is as beautiful to the understanding as it is to any of the senses.

The third lecture of this series was delivered on the evening of 1st March by Professor J. Graham Kerr, of Glasgow University, whose subject was the "Evolution of sex in the animal kingdom." Taking the copromonas as an example, the lecturer showed that some of the lowest organisms multiplied by simply dividing the body into two new individuals. This process of multiplication by fission was repeated over and over again. Occasionally, however, it was seen that two individuals joined together to form a single individual (the zygote). This was the elementary form of a sexual process, but so far there was no differentation into male and female. A further stage in the evolution of sex was illustrated by the stylorhynchus, a small parasite of certain beetles. Here, again, a junction by fusion (process of syngamy) took place between two individual gametes, but in this case one gamete was round and non-motile, while the other could swim freely. A third stage was illustrated by the plasmodium, the parasite which causes malarial fever. In this case the two types of gametes had become very different. The first was small in size, able to swim with great activity, and was produced in great numbers; the second type was much larger, its protoplasm loaded with particles of yolk—reserve food material stored up to tide the creature through subsequent stages of its life history—without power of active movement, and less numerous. Here we had established the difference characteristic of the reproductive cells of the two sexes throughout the higher animals—the female sedentary but possessing the power of attracting the other sex, and a food hoarder; the male actively moving and improvident.

The probable physiological meaning of the process of syngamy was then discussed. It was pointed out that a protozoon individual may go on dividing itself into two through an unlimited number of generations provided that the process of syngamy takes place at intervals. In the more complex animals the individual also begins its existence as a zygote which has been formed by the fusion together of two gametes, and which proceeds to undergo fission over and over again. In this case, however, the two cells resulting from each division—instead of breaking apart and proceeding to live their own lives—remain adhering together so as to constitute the body of the individual. This forms a complex community of cells highly specialised to perform the various functions of the body. With this specialisation there has come about loss of the primitive power of undergoing syngamy. Somewhere or other in the body of the higher animals are, however, one or more patches of cells—known collectively as the gonad—which have not undergone this specialisation. They retain their ancient power of acting as gametes—of undergoing syngamy—and with it they retain their potential immortality. Any one of these cells, if it undergoes fusion with a gamete from another individual, receives a new lease of life: it proceeds with its cycle of development and develops into the body of the new individual. Most of its substance undergoes specialisation and becomes subject to natural death, but parts persist unchanged as the gonad of the new individual and retain their potential immortality. The gonad—the reproductive cells—is not then manufactured by the individual in whose body it is. It is rather a persisting portion of the same reproductive substance out of which his own body has arisen. And thus is rendered less mysterious that fact, so striking, and in these times of war so comforting, that features impressed upon the body during its lifetime, such as wounds or mutilations by disease, are not repeated in the bodies of the descendants.

The fourth lecture of this series was delivered on Friday evening, 8th March, by Professor Graham Kerr, who traced the evolution of the reproductive organs in land animals from the lower to the higher types. As was the case with plants, so also with animals—all the evidence went to show that the first phases in their evolution were passed in the water. As time had gone on many different types of animals had forsaken their ancestral watery home and taken to the land. Among these are the higher members of the vertebrata, the group to which man belongs, and Professor Kerr took this group to illustrate the special adaptations which have made a terrestrial existence possible. The most interesting of all these adaptations to life on land were those of the reproductive processes. Such modifications were essential, for in the early stages of its development the individual repeated characteristics of earlier aquatic phases of evolution. Thus a man or a bird in early stages of his individual development possessed gill openings on the sides of his neck like those of a fish. The bird or man was, in fact—in the main features of its structure—a fish in these early stages. Obviously the existence of such a fish-like stage organised for life in water constituted a serious difficulty in the way of becoming purely terrestrial. In the various kinds of frogs and toads were seen many not altogether successful attempts to get over this difficulty. It was only in the vertebrates higher in the scale than the amphibia that the emancipation from the watery environment had become complete. In the reptiles and birds the egg was enclosed in complicated protective coverings. The young individual became enclosed in a water jacket—the amnion—to preserve its delicate body from injury by sudden jars; it developed a new breathing organ, the allantois, for breathing air through the pores of the shell. The actual egg—the macrogamete—although a single cell, had become very large, and was stuffed with concentrated food material to support the young individual till it made its exit into the world. In the mammals a further step had been taken, for the egg was now retained within the body of the mother. There was no longer need of a protective egg-shell, and it had disappeared. There was no longer need for a store of reserve food, and so it also had gone, and the whole egg had shrunk correspondingly in size, so that it measured in the human being only about 1-100 inch in diameter. Finally, the allantois, which in the bird served merely for breathing, had now become evolved into a very complex organ—the placenta—by which the young embryo absorbed nourishment from the body of the mother.

Dr. David Newman, in proposing a vote of thanks to Professor Graham Kerr, said that at the close of the present course of lectures another series would be arranged to take up the more practical aspects of the subject.

NEW PREPARATIONS, &c.

From Messrs. Harkness, Beaumont & Co., Edinburgh.

Lactomaltine.—We have received from Messrs. Harkness, Beaumont & Co., Edinburgh, a sample of Lactomaltine, which is a combination of cream, milk and malt, prepared *in vacuo* by a special process. The manufacturers have been granted a special licence by the Ministry of Food to secure the cream required. The preparation is highly palatable, and is not likely to be objected to by children. It should prove of much value in wasting diseases and states of malnutrition.

From Messrs. Burroughs Wellcome & Co., London.

'*Hypoloid' Scopolamine Hydrobromide.*—In view of the increasing application of scopolamine-morphine narcosis, Burroughs Wellcome & Co. have added to their list two strengths of pure scopolamine hydrobromide presented in 0·5 c.c. sterile solution. These are known as 'Hypoloid' Scopolamine Hydrobromide gr. $\frac{1}{150}$ and gr. $\frac{1}{450}$, and are additional to 'Hypoloid' Scopolamine Hydrobromide (gr. $\frac{1}{130}$) and the 'Tabloid' hypodermic products of hyoscine hydrobromide already available. The 'Hypoloid' product is very convenient for this purpose. The precise dose of medicament in sterile solution is contained in a hermetically sealed glass phial, which is opened when required for use and its contents drawn into the syringe. The physician is thus ensured of using an accurate sterile dose of the pure lævo-rotatory drug with the minimum of trouble. The new strengths are those usually employed, gr. $\frac{1}{150}$ as an initial injection, and gr. $\frac{1}{450}$ for subsequent use. (See Report to the Royal Society of Medicine of the Committee appointed to investigate Scopolamine-Morphine Narcosis in Child-Birth (Twilight Sleep), in *The Lancet* 15th December, 1917, pp. 897 and 898.) 'Hypoloid' Scopolamine Hydrobromide gr. $\frac{1}{150}$ and gr. $\frac{1}{450}$ are issued each in boxes of 10 phials.

REVIEWS.

Manual of Medicine. By Thomas Kirkpatrick Monro, M.A., M.D. Fourth Edition. London: Baillière, Tindall & Cox. 1917. (18s. net.)

It is now a considerable number of years since Professor Monro's *Manual of Medicine* gained that firm hold upon public favour of which the appearance of a fourth edition is but the confirmation. The reasons for its popularity are not far to seek. Of a size midway between the larger text-books, which it is impossible for students or for busy practitioners to master as a whole, and the smaller handbooks which are used principally for examination purposes, it affords both to the practitioner and to the student who wishes to gain more than a superficial knowledge of his work a survey of the whole field of medicine, and an account of all the morbid conditions he is likely to meet with in his professional life which omits no essential feature, and which is at the same time clear, concise, and eminently practical. The interval of over six years between the appearance of the third and the present edition is accounted for by the demands which the war has made on the time of medical men. It has proved to the advantage of the reader, for it has enabled Professor Monro to include short articles on the forms of disease which have sprung into prominence during the war, and in other ways to bring the book abreast of the most recent discoveries in medicine. The progress of knowledge has altered the classification of various diseases; thus acute poliomyelitis is now described among the infections, to which rat-bite fever and trench fever have also been added, while beri-beri and scurvy find a place among constitutional disorders, and acromegaly has been removed from nervous diseases to diseases of the ductless glands. Due note has been taken of recent work upon the cardiac arrhythmias, and the subject has been illustrated by a number of representative polygraphic tracings. The book includes a section on diseases of the skin, short indeed—it occupies but sixty-three pages out of over a thousand—but characterised by the same clearness of description which marks the other sections, and furnishing many a useful hint for treatment. Yet we think that skin diseases are more advantageously dealt with at greater length, and that their proper presentment demands an abundance of illustrations which cannot be furnished in a volume like the present. Where considerations of space are of importance, the space gained by omitting the subject of skin diseases might be utilised with much benefit in expanding, for example, the section on intoxications, or in correcting the disproportion between the number of pages allotted respectively to tuberculosis and syphilis. Forty pages are given to tuberculosis, twelve to syphilis; yet if we consider the wide prevalence of the latter, and the prominence now rightly given to its toll of infantile deaths, it would seem at least as important that the practitioner should be thoroughly acquainted with its protean forms as with those of tuberculosis. These, however, are minor criticisms upon a book in all other aspects admirable, and a credit both to its author and to the Glasgow school of medicine.

The Practice of Medicine. By Sir FREDERICK TAYLOR, Bart, M.D. Eleventh Edition. London: J. & A. Churchill. 1918. (24s. net.)

IN less than twenty years Sir Frederick Taylor's work, which was first published in 1890, has attained its eleventh edition. The fact speaks for itself, and it is not the office of the reviewer to dilate upon the well-known features which have earned the book its very conspicuous position among the larger text-books of medicine. It has been very carefully revised and brought thoroughly up to date, and it must suffice to indicate the main features in which it differs from former editions. The new subjects introduced include trench fever, progressive lenticular degeneration, pulmonary embolism, diaphragmatic hernia, effects of strain on the heart—a subject which has assumed so much importance in connection with the war, trinitrotoluene poisoning, infantilism, renal haemorrhage, osteogenesis imperfecta, and trench frost-bite, a name which Sir Frederick Taylor prefers to trench-foot, and which indicates his views as to the nature of the condition. The name spirochætosis ictero-hæmorrhagica replaces that of Weil's disease, and the article on the subject has been rewritten in the light of recent research. In the sections on ductless or endocrine glands, dysentery, paratyphoid fevers, poliomyelitis, tetanus, hysteria, diseases of muscles, pleurisy, arterial tension, examination of the heart, diseases of the tonsils, diabetes, and beri-beri much new matter has been introduced. Adrenal inadequacy and hypertrophy, dystrophia adiposogenitalis, and infantilism are all noted in connection with the endocrine glands: the latest work on the dysenteries and on paratyphoid is fully recognised: the treatment of cerebrospinal fever and poliomyelitis is brought up to date; the varieties of tetanus are clearly distinguished and its specific treatment thoroughly discussed: the section on pleurisy is very full and clear; under examination of the heart the modern methods receive full consideration, and are well illustrated by polygraphic tracings and electro-cardiograms; the pathology of diabetes is clearly handled, and the recent Allen treatment is noticed at some length. The book contains fourteen more illustrations than the last edition, and its value is materially enhanced by the excellent series of skiagraphic plates illustrating many of the obscurer conditions of intrathoracic disease. It affords a comprehensive survey of the subject of internal medicine, is very clear and throughout exceedingly practical, and is written in an easy style which makes its perusal a matter of pleasure as well as of profit to the reader.

Encyclopædia Medica. Second Edition. Under the General Editorship of J. W. Ballantyne, M.D., F.R.C.P.E. Vol. IV: Ear to Filariasis. Vol. V: Filix Mas to Heart. Edinburgh and London: W. Green & Son. 1916 and 1917. (20s. net each volume.)

The new articles in the fourth volume of the *Encyclopædia Medica* are three, those on otosclerosis, by Mr. J. S. Fraser; eclampsia and the pre-eclamptic state, by the General Editor; and eugenics, by Dr. C. W. Saleeby. Mr. Fraser's article forms a part of the general subject of diseases of the ear, with which the volume opens: Dr. Ballantyne's gives an excellent and full account of puerperal eclampsia, both from the theoretic and the practical side; and Dr. Saleeby makes in somewhat intemperate language what is really a temperate and impartial statement of the present position of eugenics, both as a science and as a hobby. He appeals, in closing, to the medical profession to rescue it from the hands of propagandists. The most important sections of the book, if importance is to be judged by the space allotted to each, are those devoted to the ear, embryology, eczema, and ectopic gestation. The series of articles dealing with the ear has been given to authorities on the different branches of the subject, to which as a whole no less than a hundred and seventy pages have been assigned. Out of these articles a text-book of very considerable size might be constructed, with the advantage over the usual one-man text-book that each part of it has been written by an author who is an expert in his particular branch. In the article on embryology, from the pen of the Editor, the development of the ovum is followed to the end of the sixth week, and the subject is illustrated by a series of admirable plates and figures which materially aid the author's clear presentment in lessening its complexities. Dr. Leslie Roberts deals with eczema at considerable length, and from an entirely modern point of view, which it is interesting to contrast with the older purely clinical descriptions. He regards the pathology of eczema from the standpoint of histo-dynamics, and shows that the disease depends essentially upon a lowering of surface pressure and the effects so produced upon the capillaries of the skin. The conception is fruitful in that it furnishes the physician with clear and rational indications for treatment. All the articles in the volume, as in its predecessors, have been carefully revised and brought down to date, and the illustrations add much to its attractiveness and utility.

In volume five the new articles are those on first aid, by Dr. Watson Wemyss; the development, anatomy, and physiology of the fœtus, by the Editor; diagnosis in gynæcology, also by the Editor; and examination of the heart by graphic methods, by Mr. G. D. Mathewson. Dr. Ballantyne devotes sixty pages to his account of the fœtus, a subject which in view of the prominence recently given to ante-natal treatment has become of the highest importance. Taken along with his article on embryology in the previous volume, it forms a very complete statement of the entire course of ante-natal life. The paper on diagnosis in gynæcology is concerned mainly with methods of case-taking, manual examination, and the diagnostic use of instruments. That on graphic methods of examining the heart forms a part of the series of articles upon the heart which occupies two hundred pages—more than a fourth of the volume. The section on cardiac embryology, anatomy, and physiology, with that on motor disorders, is written by Dr. Alexander Morison; the affections of the myocardium and endocardium are treated pathologically by Dr. Kelynack, and clinically by Dr. Graham Steell; congenital malformations fall to Dr. John Thomson: and the surgery of the heart to Mr. James M. Graham. There are in the volume numerous other articles of importance, of which space forbids more than a mention. We may select for notice those of Mr. D'Arcy Power on fractures, Mr. Mayo Robson on diseases of the gall-bladder and bile-ducts, Dr. Still on the gastro-intestinal disorders of infancy, Dr. Hyslop on general paralysis, Mr. Priestley Smith on glaucoma, Dr. Alexander on gout, Dr. David Newman on hæmaturia, and the excellent paper of an unnamed contributor on the applied anatomy of the head and neck. With the exception of Dr. Hyslop's, all have been revised or rewritten by their original authors, and are thoroughly representative of the present position of knowledge.

Many others of almost equal interest must escape even mention in the compass of this review, but enough has been said to show that the succeeding volumes of the *Encyclopædia* fully maintain the very high level of their predecessors. Its most conspicuous feature is that, without omission of any theoretic considerations of importance, every contributor has kept in the foreground the practical aims of medicine.

Marching on Tanga. By FRANCIS BRETT YOUNG, M.B. London:
W. Collins, Sons & Co., Limited. 1917. (6s. net.)

THIS record of work with a field ambulance in General Smuts's advance upon Tanga is by one who is better known in the world of literature than in that of medicine. Very many readers of fiction have been grateful to Mr. Brett Young for enchanted hours, and it is well that the description of a vital part of the East African campaign, of his personal share in which he speaks so modestly, should have fallen into his hands. None but a practised pen could have so pictured for us the scenes which he describes that we feel ourselves a part of them. The movement and the dust of the column, the sudden bursts of fighting, the brief talks with passing strangers, met for a moment yet vividly characterised, are all seen by the reader. But it is not mere description that so fascinates him; he feels that Africa has sunk into the being of Mr. Brett Young, who is thus able to transmit to others a sense of its glamour and its cruelty almost equal to his own. The scene in the forest in the opening chapter has an eeriness which we know to be no invented thing, and which brings home to us the strange fascination which may lie in things unclean. Mr. Brett Young's book is literature, but it is also truth.

Shell-Shock and its Lessons. By G. ELLIOTT SMITH, M.D., F.R.C.P., F.R.S., and T. H. PEAR, B.Sc. Manchester: at the University Press; and London: Longmans, Green & Co. 1917. (2s. 6d. net.)

SMALL as it is, this is in many ways the best book on shell-shock which the present war has produced. Its authors, who are tied to no particular school of psychotherapy, take a broad and catholic view of their subject, and discuss its nature and results with a freedom from prejudice, an impartiality of observation, and a balance of judgment, which are far from common in these days of psychological polemics. The chapter on the nature of shell-shock is only some twenty-six pages long, yet it includes a description of the symptoms which could hardly be bettered for truthfulness or for the width of its scope. The chapter on treatment discusses all the important methods which have been proposed, borrows from each what is best in it, and unifies the whole conception of the subject by its appeal to rational principles. That on psychological analysis and re-education contains some very sound criticism of the popular antagonism to these methods, and points out the indications which justify their employment. But the authors do not stop here. Going on from general considerations of shell-shock as a psychoneurosis, of its usually ready curability in the early stages and its often inveterate resistance in the later, when its morbid concepts have become part of the patient's ratiocination, they indicate the light which it throws upon the treatment of insanity, and while protesting against the stigma which may be cast upon the psychoneurotic by his treatment in insane asylums, they enter a strong plea for the establishment of psychiatric clinics, where both the psychoneurotic and the early mental case may be treated while there is yet a prospect of cure. Continental countries—those of our enemies among them—are far ahead of us in the treatment of the insane. Here there is no public provision for treatment until a case has become certifiable, often at a stage from which no recovery is possible; and if recovery comes, the patient and his family live thenceforth in popular opinion under the shadow of the whispered word "asylum." There psychiatric clinics exist where cases of nervous disease are treated along with early mental cases, with the result that no stigma attaches to anyone frequenting the clinic, that relatives willingly bring the mentally afflicted, and that the number of recoveries is greater than anything that our methods can show. Here at great expense we make hopeless cases comfortable; there at much smaller cost they restore men and citizens to their friends and to the State. If for nothing else than its fervid plea for reform in our lunacy laws and administration, this book would be admirable; but it is admirable in all its parts.

Practical Guide to Diseases of the Throat, Nose, and Ear. By WILLIAM LAMB, M.D., C.M.Edin., M.R.C.P.Lond. Fourth Edition. London: Baillière, Tindall & Cox. 1917. (8s. 6d. net.)

THE popularity of this manual is evident by the issue of a fourth edition, and it well deserves its success. It is filled with practical hints from close, careful clinical observation and study. The author modestly calls it a "Guide for senior students and junior practitioners," but we feel sure that even those with a more extensive knowledge of the subject will find much in it that will be useful and helpful. In the present edition there have been a few additions to the text to bring it up to date—these are chiefly a fuller description of the submucous resection of the nasal septum, the intranasal treatment of fronto-ethmoidal suppuration and the vestibular reactions in labyrinthine disease. There is also a short section on the prevention of otorrhœa. This has reference mainly to otorrhœa in measles and scarlet fever, and is well worth emphasising. The treatment advised is so successful that a former superintendent of Hardwicke Fever Hospital is quoted as saying, "Of late years I cannot call to mind a single case in which a patient left the hospital with the ears running." This might be recommended to the notice of public health authorities in charge of fever hospitals as a condition to be aimed at. The volume is well illustrated and indexed, and has a good formulary. The price is remarkably moderate.

Spiritualism and Sir Oliver Lodge. By CHARLES A. MERCIER, M.D., F.R.C.P., F.R.C.S. London: The Mental Culture Enterprise. 1917. (4s 6d net.)

TWO circumstances have conspired of late years to favour the cult of spiritualism—the longing for a message from the dead which exists in so many of those bereaved by the present war, and the endorsement of the possibility of such communications by Sir Oliver Lodge, a man of high scientific attainment, and of outstanding position as Principal of Birmingham University. His pronouncements upon the subject have resulted in a rush to the spiritualistic fold on the part of many who previously wished to believe, yet feared to be gulled. The number of those who dally with spiritualism is already great, and is steadily increasing. Yet it is well known to medical men that such dalliance may, in those of sensitive nervous organisation, result in disaster, and in final overturn of the mental balance, if, indeed, it is not in some cases already symptomatic of early mental instability. Last year a vigorous note of warning on this aspect of the subject was very properly sounded by Dr. Robertson, of Morningside, in his annual report upon the patients under his care, and it may have deterred some would-be investigators from their pursuit. But there are many, confident of their mental soundness or driven by the pangs of severed love, who will think lightly of the risk if they are assured that it is "scientifically proved" that messages from the dead can be transmitted to the living. They know that many mediums are conscious or unconscious frauds: they will risk that, in the hope that in their own instance the message may be genuine, if they believe it to be demonstrated on the highest authority that genuine messages have been received. A critical examination of Sir Oliver Lodge's proof therefore becomes a necessity. If they stand, they stand, be the consequences what they may; if they fall, it is to be hoped that much evil will fall with them. To this task Dr. Mercier brings, besides his scientific attainments, the special qualities of a trained logician and examiner of evidence. He was asked to review *Raymond*, but declined on the ground that the sorrow of a bereaved mother was not fit matter for discussion in the public press. We appreciate his motive, but regret that it precluded him from a demonstration of the frailties of that plausible book. Its perusal, however, sent him to *The Survival of Man*, upon the evidence adduced in which Sir Oliver Lodge's belief in intercommunication is founded; and the present work is in the main an examination of that evidence. It begins by a survey of the recurrent prevalence of spiritualistic ideas in epidemic form, and goes on to an investigation of the grounds of belief, and of the kind of evidence to which credence should be attached. The specific propositions are illustrated by examples taken from the evidence to which Sir Oliver attaches most weight, and under Dr. Mercier's skilled analysis they prove flimsy indeed. Opportunities for collusion are shown to have existed when none were suspected, the credibility of the witnesses is proved to be by no means above suspicion, and the credulity of Sir Oliver Lodge is demonstrated in many instances. Dr. Mercier draws an interesting parallel between the evidence for spiritualism and that for witchcraft. Both are of the same kind and equally well attested, so that logically the believer in spiritualism is almost forced to believe in witchcraft too. The final chapter is given to a dissection of the experiences with Mrs. Piper, and Dr. Mercier has little difficulty in showing that she could have known many of the things which were said to be impossible for her to know. The bottom is knocked out of Sir Oliver's proof. The convinced spiritualist, however, may still reply that there are things beyond argument, things incapable of a rigorous proof, which yet from their nature or from the sanctity of their message demand belief. If he adopts that line, the best answer would seem to be that a creed which demands belief in the *enfantillages* of *Raymond* is on the face of it no creed for thinking men and women. However strong the appeal of the higher aspects of spiritualism in the writings of such men as Myers—and there must be few who have read the noble closing chapters of *Human Personality* without experiencing at least the impulse to believe—a creed that impels one hitherto of sound judgment to record in all seriousness the caresses of a table would, if accepted, make chaos of the minds of men.

The Thyroid Gland in Health and Disease. By ROBERT M'CARRISON, M.D., D.Sc., F.R.C.P., London: Baillière, Tindall & Cox. 1917. (12s. 6d. net.)

MAJOR M'CARRISON's researches upon the etiology and pathogeny of goitre, and his successful treatment of it by means of vaccines, are already known to a wide circle of his professional brethren; the extent of his work upon the general pathology of the thyroid gland, with the consequences that it involves in the rational treatment of exophthalmic goitre and of tetany, are not as widely known as they deserve to be. This volume embodies his various researches in a general survey, and it may be said at once that it throws welcome light on much that has been dark in thyroid pathology. Briefly summarised, his main thesis is that, excluding inflammations, diseases of the thyroid have essentially the same histological beginnings. They commence in all cases with active secretion, merging into abnormally active secretion, with multiplication of cells and new vesicle formation. Along with this there is an increase of fibrous stroma and of lymphoid cells, a compensatory process to which is added a chronic inflammatory element due to the action of toxic agents on the thyroid. This varies in acuteness and in degree, and may or may not cause enlargement of the gland. It may end in atrophy of the cells and their replacement by fibroblasts (myxœdema), or in reversion to the colloid state (colloid goitre), or it may continue without rest to ultimate exhaustion of the cells (Graves' disease) and cell death (myxœdema following Graves' disease). The degree and variety of the changes depend upon the nature and dose of the toxic excitant which is the ultimate cause of the thyroid condition. In adult life the toxic element is derived from organisms inhabiting, in the great majority of cases, the gastro-intestinal tract; in fœtal life (cretinism) from toxins circulating in the maternal blood. Major M'Carrison's work has already familiarised us with this theory of endemic goitre and of cretinism, and has gone far to prove it correct: the facts and arguments which the present volume adduces tend very strongly to show that the thyroid change is not the whole of exophthalmic goitre, which has a deeper cause in the influence of the toxins of anaerobic intestinal organisms upon the thyroid and the system as a whole. The consequences which this involves in treatment may readily be imagined; it discredits operative interference with the thyroid as being in effect symptomatic treatment only, and calls for vigorous gastro-intestinal antisepsis and strict attention to the *primae viae*. Though there may be quantitative excess, there would tend, on this interpretation, to be qualitative defect of thyroid secretion even in exophthalmic goitre, and careful thyroid medication may therefore have a rational place in the symptomatic treatment of its later stages, as may also vaccines derived from the organisms of the intestinal tract. With both of these Major M'Carrison narrates some successes. That the phenomena of tetany depend not alone upon parathyroid disease, but also partly on thyroid implication, is another of his theses. He discriminates a nervous type of cretinism, which has very close resemblances to Little's disease, or the cerebral diplegias and paraplegias of children; and it would seem that from an unexpected direction much light may be shed on the features of a malady, the etiology of which has hitherto been largely speculative. Upon a point of practice, Major M'Carrison does good service in calling attention to the excessive doses in which thyroid extract is usually given, and to the evil results which may follow such doses. Three to five grains are often ordered thrice daily, a quarter to half a grain once daily being a sufficient dose at the outset, the quantity to be increased only under careful observation. It will be seen that the book is one which ought not to be neglected by anyone interested in the pathology or therapy of morbid affections of the ductless glands.

The Principles of Rational Education. By CHARLES A. MERCIER, M.D., F.R.C.P., F.R.C.S. London: The Mental Culture Enterprise. 1917. (2s. 9d. net.)

WHATEVER Dr. Mercier writes is worth reading, and his views upon the vexed question of public school and university education are worth the close attention of all who are interested in the subject. They lose nothing from the manner of their presentation, which follows from his habit of clear thinking and incisive speech. His indictment of the present system, under which, in too many instances, ten years of school and university training leave the brain a *tabula rasa*, is forcible indeed, but is largely justified by the results which every reflective man must see on all hands. His leading principle is that knowledge is gained by action, not by parrot-work ; that the mind should be trained by doing, and by doing those things which will fit it for the purposes of after-life, not those which at best will furnish it with a more or less learned or elegant recreation. Those who desire to know how he proposes to apply the principle to practice must be referred to his book, with the assurance that they will find it stimulating and provocative of thought.

Hystérie-Pithiatisme et Troubles Nerveux d'Origine Reflexe en Neurologie de Guerre. By J. BABINSKI and J. FROMENT. Collection Horizon : Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1917. (4 francs.)

THE attention of neurologists of all countries has been devoted since the outbreak of war to the numerous aberrant forms of functional and organic nervous disturbance which have been induced by its circumstances of extraordinary strain and shock. The *rôle* of hysteria in the production of such disturbances is of much importance, and the diagnosis between hysteria and organic disease is often a matter of some difficulty. Hysterical disturbances are, in the majority of instances, if not in all, susceptible of rapid cure by appropriate treatment. They are produced, according to the more modern view of hysteria urged by MM. Babinski and Froment, by suggestion, and are removeable by suggestion (hence the alternative name pithiatism, from *πειθώ*, I persuade, and *’ιατός*, curable). The war has afforded the authors an unequalled field for the study of the effects of emotional and physical shock in the production of hysteria, and the results of their study are strongly to corroborate their view that hysterical phenomena are not a primary effect of shock, but arise at a later period from auto- or from hetero-suggestion. The importance of their views in regard to prophylaxis, diagnosis, and treatment must be manifest. The second part of the volume deals with nervous affections of reflex origin, the paralyses, atrophies, or contractures that arise in a limb which has been wounded, for example, without organic lesion of the nervous system. They constitute a group intermediate between hysteria and organic disease, and are more allied to the latter in their prognosis and their unamenability to treatment. To distinguish them from hysteria proper is therefore a matter of real importance, and it is a service which MM. Babinski and Froment have performed in the ablest manner. The numerous illustrations add very greatly to the value of the clinical descriptions.

Psychonéuroses de Guerre. By G. Roussy and J. Lhermitte. Collection Horizon: Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1917. (4 francs.)

This volume is in a sense complementary to that of MM. Babinski and Froment on hysteria and reflex nervous disorders of the war, but while to a limited extent it covers the same ground in dealing with hysteria pure and simple, it treats from a more general point of view of the functional affections at the basis of which lies a psychic emotional element. An exact description of the symptomatology is a feature of the book which will commend it, not only to neurologists, but to all medical officers who have to deal with these troublesome cases. Beginning with a definition of the psychoneuroses, and a discussion of the points in which they differ from simulation, the authors proceed to a clinical description which passes from the simplest forms, such as elementary motor affections, to the more complex psychopathic disorders, such as may be manifested in purely psychical disturbances. Affections of the gait, sensory disorders, visceral disturbances, nervous crises, are all reviewed in turn, and the book ends with a study of etiology, general pathology, and treatment of the conditions described, and of the medico-military measures to be adopted in dealing with them. It has all the lucidity and logical development which is so characteristic of French medical writing, inherent as it is not only in their literature but in the spirit of the nation; and it forms a contribution to the subject which cannot fail to be read with as much profit as pleasure.

Elements of Hygiene and Public Health. By CHARLES PORTER, M.D., B.Sc. London: Henry Frowde and Hodder & Stoughton. 1917. (12s. 6d. net.)

THE importance of the subject of public health in the State may in some measure be gauged by the number of books which are issued from the press bearing upon the problems of preventive medicine. This is a new book. Its plan, according to its author, differs from others in respect that it has been devised and written particularly for the busy medical practitioner, and it does not pretend to do more, as its title indicates, than treat of the "elements" of hygiene and public health. Hence it must be judged from these standpoints.

In the 384 pages which compose it, a large amount of apt and valuable information has been compiled from various sources, including the experience of the author as medical officer of health for one of the London boroughs. Made up of twenty-eight chapters, these bring under review practically all the subjects commonly found in any well-planned manual of public health; indeed, no subject of importance has been missed. The subject of prevention of infectious diseases has been amply treated, and the law as to notification duly set forth. A list of diseases to which the law of notification applies is given on page 44 which, however, differs from another list given on pp. 85-86. This may tend to confusion in the mind of the young practitioner beginning practice in a district in which the added notifiable diseases vary. It is satisfactory to find pneumonia pressed upon the attention of the practitioner as an infectious disease. We do not think that it ever arises except from a pneumococcal or other bacterial cause, and we are of opinion that its infective character has not been so generally recognised and acted upon as it ought to be. While pneumonia has been made notifiable in some populous centres in America, notification is not yet compulsory in this country, but the time is likely to come when it shall be. The same might be said of the summer diarrhœa of infants in view of its heavy mortality.

Venereal diseases are also treated of in the book. We agree with the author that the absolute extent to which these diseases prevail is practically unknown, but we go further and suggest that any computations which have already been given are conjectural and should be taken for what they are worth. Nevertheless, the existence of these diseases, either in their primary or later manifestations in the individual or as hereditary effects, constitutes a serious blot on the public health history of this and other countries. Now that the danger signal has been hoisted and legislative enactments for their prevention and treatment have been devised and made law, it is to be hoped that by vigorous prosecution of these measures much may be achieved in their repression. Whether this country has struck at the root of the matter, however, remains to be demonstrated.

In view of the increased importance of industrial diseases arising out of the Workmen's Compensation Act, the author devotes attention to occupational diseases and industrial hygiene. He puts before his readers the notifications to be made by the practitioner to the Chief Inspector of Factories of industrial poisonings and diseases which may arise from occupation and the means for their prevention. We observe under the head of arsenic that he states as one of the *chief* signs of poisoning "perforation of the nasal septum." This is a very rare sign indeed—by no means a *chief* sign—in arsenic poisoning, although it is relatively common in chrome poisoning among workers in the chrome industry. Some useful information is given respecting "dope poisoning" in aeroplane work and the toxic effects of nitro- and amido-derivatives of benzene in the manufacture of explosives and other occupations. In like manner attention is called to skin and other surface tissue affections, eye affections, ear affections, and the effects of working in abnormal atmospheric environments.

The subjects of climate and meteorology and of disposal of the dead are discussed in a chapter devoted to each. Speaking of cremation and the precautions to be taken against the concealment of crime, the author states "there must be produced two medical certificates from qualified men who have seen the body." Since this work is for the general practitioner, it would have been better if it had been stated that one certificate was to be given by the medical attendant of the last illness of the deceased and a second confirmatory certificate by another practitioner of not less than five years' standing, and attention ought to have been drawn to the fact that in the Home Office regulations relating to cremation this second certifying practitioner must be the holder of one of certain positions named in the regulations. Ventilation, warming, and lighting receive due notice. The removal and disposal of refuse and waste, including the subjects of house-drainage, traps, sanitary conveniences and appliances, drain-testing, sewers and sewage, disposal of sewage and sewage purification, conservancy systems, and removal and destruction of refuse are discussed at some length and clearly put before the reader. The author employs the expression "overground drains" to include the soil-pipe, waste-pipe, and rain-pipe. We think this general term a mistake: for as the author himself says—"these three pipes are all overground pipes." The word pipe, descriptive of its purpose, is, therefore, a sufficient designation. Hitherto in house-drainage the term "drain" has been confined to any underground channel for convection sewerwards of the contents of the soil-pipe, waste-pipe, and rain-pipe, and to avoid confusion this arrangement, we think, ought not to be disturbed. The subjects of schools, school-sites, and school hygiene generally receive appropriate attention, as do other subjects.

The author must have intended his book chiefly for the practitioner in England, for we observe under the heading of "death certification" on page 375, he refers simply to the time within which, after a death, certification must be made in England, without any allusion to the time or manner of certification in Scotland or Ireland.

The book is furnished with 98 illustrations of varying merit; indeed, some are not very illustrative. There is a satisfactory index. Keeping in mind the intention of the author with regard to those for whom the book was written, we may say generally that it will serve a useful purpose and be helpful to the practitioner, particularly to such as have been for several years in practice. Its plan is well conceived, its matter clearly and compendiously expounded, and it does not pretend to be exhaustive in its treatment. We can, therefore, with confidence recommend it to the practitioner as a handy and useful manual.

The Internal Secretions: their Physiology and Application to Pathology. By E. GLEY, M.D. Translated from the French and edited by MAURICE FISHBERG, M.D. New York: Paul B. Hoeber. 1917. ($2.00 net.)

THE English translation of Professor Gley's work comes at a time when the conception of internal secretion is in a general way familiar to everybody, when such secretions are commonly credited with exceptional therapeutic properties, and when preparations purporting to represent them are administered, often indeed scientifically, but nearly as often on the vaguest indications, and with little more than hope as a guiding principle. Its warnings and cautions, its expositions both of the considerable amount that we know and of the still greater amount that we do not know of the nature and uses of these secretions, therefore make their appearance very opportunely.

The book opens with a historical account of the origin and development of the concept of internal secretion, and proceeds to discuss the characteristics of the internal secretory glands and of the products of their activities, while its final section is devoted to an account of their function in health and disease.

To determine a true internal secretion the cells of the gland in question must present the characteristics of granular elements in close relation to the efferent vessels; a specific substance must be chemically determined in these cells and in the venous blood; and the venous blood must have the physiological action and properties of this substance. Not all the so-called endocrine glands fulfil these conditions, and it is in only a few cases that the specific substance has been chemically identified in the venous blood. This physiological proof has been given for the spleen and pancreas, for secretin and for adrenalin, but not as yet for the mammary hormone, or for any of the morphogenic internal secretions including the thyroid. The proof of internal secretion from the action of organic extracts is beset by fallacies. Substances contained in such extracts may not exist in the living glandular tissue, or be regularly excreted into its venous blood; and all organic extracts consist of a conglomeration of substances which may or may not include the specific product of the gland. The properties of these substances may mask or exaggerate those of the internal secretions. Further, an identical physiological reaction may be produced by a multiplicity of organic extracts, whence it follows that these extracts are non-specific. Extracts of thymus, thyroid, testicles, prostate, and pancreas, for example, may all provoke contraction of the bladder. The action of such extracts is often toxic, but their toxicity is met by the phenomenon of tachyphylaxia, resulting in very rapid immunisation, and it is absurd to consider an extract against the toxic effects of which the organism protects itself in several minutes as a product of internal secretion. In some instances, too, a characteristic physiological effect can only be obtained by the injection of doses of the extract so excessive that they represent in weight the total mass of the organs from which it was obtained, or even of several such organs. In view of such observations the therapeutic method of organic extracts, as commonly applied, becomes open to much suspicion.

Considerations of space prevent a further development of Professor Gley's argument, or of his lucid exposition of the actual state of our knowledge in regard to internal secretion; but enough has been said to show that except in a few instances the therapeutic use of organic extracts rests upon a very uncertain basis, and that one is not justified in supposing without further demonstration either that a given extract contains the internal secretion of the gland from which it is derived, or that it contains it as an isolated substance from which nothing but its specific effects are to be expected. The book is much to be commended to all those interested in the subject of internal secretion, whether from the physiological or from the therapeutic side.

Minor Maladies and their Treatment. By LEONARD WILLIAMS, M.D. Fourth Edition. London: Baillière, Tindall & Cox. 1917. (7s. 6d. net.)

DR. WILLIAMS'S book is now very well known to the profession, and the appearance of a fourth edition is an indication that it continues to fill a place of its own. Minor maladies receive but scant attention in the medical curriculum; the subjects of them do not present themselves even at the outdoor department of large hospitals: and the young practitioner is thus launched upon his career with little or no practical experience in the treatment of coughs other than those due to organic disease, of constipation, simple dyspepsias, neuralgias, or the symptoms incidental to old age. Yet if not the most formidable, these are among the most annoying of ailments from the patients' point of view, and they constitute nine-tenths of the cases met with in ordinary practice. It is precisely in such cases, where his previous experience fails him, that the practitioner will turn to Dr. Williams for assistance; and he will seldom turn in vain. There is nothing stereotyped about the book; the author, as he claims, has preserved a mind open to progress; and while he does not abandon "old-fashioned" methods of treatment because they are old-fashioned, he includes in his therapeutic system all the modern methods that appear to be of permanent value. There is only one evidence of haste in the preparation of the volume; the page references in footnotes are often inaccurate; but we trust that this defect may be corrected in subsequent editions.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

OBSTETRICS AND GYNÆCOLOGY.

Pregnancy and Pulmonary Tuberculosis. By Joseph Walsh, M.D. (*American Journal of Obstetrics*, February. 1918), and by C. C. Norris, M.D. (*Amer. Jour. of Obstet.*, June, 1916, and February, 1918).—Dr. Walsh has made use of clinical material at White Haven Sanatorium, and has compiled a list of thirty-eight women who have had pulmonary tuberculosis, and have been pregnant; his observations extend over fifteen years. He begins his paper by quoting German statistics which, according to his interpretation, show that pregnancy does not exert an extremely unfavourable influence. He condemns the German and Italian obstetricians who advocate the induction of abortion or premature labour in every case of tuberculosis, whether chronic or acute.

Dr. Walsh divides the women into two classes—patients in whom the tuberculosis was recognised before pregnancy, and those in whom it was first diagnosed during pregnancy. In twenty-seven of his patients the disease was recognised and treated before pregnancy, and, in the majority of these, before marriage. These twenty-seven patients had thirty-nine children; of these mothers two died, one about three months, and the other a year or so after delivery. The former was a far advanced case, and she became pregnant about four years after treatment; the latter was in an early stage and was one year after treatment. The remaining twenty-five are apparently as well as before pregnancy. The average period of the occurrence of pregnancy was four years after treatment.

In eleven women the disease was first discovered during pregnancy; five were far advanced and five moderately advanced in the disease. Of these, three died very soon after being seen, so that no treatment—or very little—had been possible; all three were advanced cases. Six of the eleven came successfully through their confinements and are alive now, from three months to thirteen years after, or on an average two years.

Dr. Walsh states that his figures show a very slightly lower death-rate among his pregnant women than that which is general among tuberculous women of corresponding ages, viz., that ten years after treatment, apart from pregnancy, 10 per cent of early cases die, more than 30 per cent of moderately advanced cases and more than 50 per cent of far advanced cases. His numbers are admittedly too few to base absolute conclusions.

He knows of only three women in whom abortion was performed, all of these against his advice. Two of these died four years after the operation, which caused as much reaction, Dr. Walsh believes, as would have been caused by labour at term, and he thinks, from his experience, that they would have lived as long if they had been allowed to go to term. Referring again to the German and Italian writers, he quotes Ebeler, who operated in various ways to produce sterility with a mortality of 13 per cent, which is the same as Dr. Walsh has found, but his thirty-eight women had fifty children. Others, again, and most of the French school, following Pinard, forbid the interruption of pregnancy in all stages, for it is, they maintain, only the destruction of a healthy life in order to lengthen a sickly one. Dr. Walsh does not give any figures to show the death-rate among his infants.

He concludes that active tuberculosis should be considered a contra-indication to marriage, while a quiescent condition, if the patients have been well treated and educated, is no bar to marriage. Such patients, if under treatment, may come successfully through a confinement with little, if any, advance in the disease. Women in an active stage of the disease do undoubtedly run an increased risk from the pregnancy, but operations for abortion, especially if associated with operations for sterilisation, have a death-rate so high as to make a continuance of the pregnancy the lesser evil.

Dr. Norris, on the other hand, takes for granted that experience shows tuberculosis to be unfavourably influenced by pregnancy. He draws special attention to the frequency with which the *larynx* becomes affected in this class of case, and ascribes it to the normal swelling and congestion of the larynx (false cords) in pregnancy. This complication naturally makes the prognosis extremely grave.

The *puerperium* is more dangerous than the pregnancy; possibly from tubercle bacilli being set free in the straining of labour, and so being able to attack a subject depressed by the loss of blood, prolonged muscular exertion, and so on, associated with labour. Dr. Norris thinks that pregnant women are more susceptible than others to tuberculous infection. This may be in part due to the lack of fresh air and exercise so commonly associated with the pregnant condition.

As regards the children, Dr. Norris states that many authorities believe that the children of tuberculous mothers are constitutional weaklings. With this he agrees only to a limited extent, for he has seen large and healthy children born of mothers in the last stages of the disease. Children of tuberculous mothers must undoubtedly run grave risks of infection, and of incurring other diseases from bottle-feeding, and so on, but children early removed to healthy surroundings do well. He concludes that tuberculosis in the mother does not exert any specific action on the infant other than would be produced by any other weakening condition.

Dr. Norris quotes statistics from sanatoria, as well as from hospitals, showing that pregnancy exerts a deleterious influence on tuberculosis, though he does not lay much stress on the figures, beyond drawing attention to the very grave import of laryngeal tuberculosis, which frequently leads to spontaneous abortion, and in patients suffering from this complication the death-rate among the infants is very high—some authorities placing it as high as 90 per cent. A tuberculous mother should not suckle, both for her own sake and for that of the child, who is liable to become infected from the mother quite apart from possible bacilli in the milk.

Dr. Norris is an advocate of the induction of labour in the presence of an extensive lesion even in a quiescent stage, or of even a small active lesion, or of any lesion in the larynx. Any of the ordinary indications for induction of labour, such as vomiting, are indications in tuberculous women also. It is conceded that intervention in the early months is productive of at least moderately good result, but that in the later months it is of little value. This is in accord with the general trend of opinion. Prior to the eighth week, Dr. Norris has had good results by removal of the products of conception with forceps and a dull curette, and then packing the uterus with sterile gauze. After the eighth week this operation is unsatisfactory, and he prefers to perform vaginal hysterectomy. Beyond the fifth month treatment should be expectant, though labour should be induced a few days before term if there be any indication that it will make labour easier, and women should not be allowed to go beyond term. The infant should be removed from the mother, and, as mentioned above, should not be suckled by her.

Dr. Norris has republished his conclusions in connection with Dr. Walsh's paper; the original paper contains a bibliography.

—E. H. Lawrence Oliphant.

Premature Separation of the Normally Implanted Placenta.

By Dr. A. H. Morse, of Yale University (*Surgery, Obstetrics and Gynecology*, February, 1918).—After describing two cases of "accidental" hæmorrhage, Dr. Morse proceeds to discuss the etiology, and relates the experiments he made to show this. His first idea was that the infiltration of the muscular coat of the uterus with blood was due to over-distension of that organ. He accordingly over-distended the cornu of the uterus in a dog, without, however, causing hæmorrhage into the muscular tissue. A case of uterine fibroids with twisted pedicle put him on the right track, and he next operated on rabbits. In this animal the veins are in three groups—ovarian, mesometric, and utero-vaginal. Tying one or two groups of veins on one side failed to cause serious damage, but ligature of all three groups caused separation of the placentæ with extravasations of blood in the myometrium. The untreated horn remained normal. Such a condition may occur, as in a case reported by Glinski, in the human subject from rotation of the uterus on its long axis, and from this, Dr. Morse concludes that more attention should be paid to the support of a mobile uterus, especially in multiparæ with relaxed abdominal walls. The article is illustrated by microsections.—E. H. L. O.

DISEASES OF THE EYE.

Bitemporal Hemiopia: The Later Stages and the Special Features of the Scotoma with an Examination of Current Theories of the Mechanism of Production of the Field Defects.

By H. M. Traquair (*The British Journal of Ophthalmology*, April-June, 1917).—In this important paper the author has left over the question of the early stages for future consideration, as the cases are difficult to obtain, and when suspected there may be years before diagnosis is possible. By later stages he understands the stages of advancing blindness in the nasal field, the earlier stages being those during which the temporal field is lost. There has been general agreement that the latter fails from above downwards, but there has been considerable difference of opinion as to the progress of the defect on the inner side.

Some writers found that the upper and some that the lower nasal quadrant remains last, but most papers were somewhat vague upon this point.

Wilbrand, Fuchs, and Hirsch supported the superior nasal quadrant, while Cushing and some others seemed to find the terminal areas in the lower quarter of the visual field.

With regard to the scotoma so often present in these cases, there has been a similar absence of investigation.

Method of examination.—The author has adopted the quantitative method of perimetry in which the test-objects vary from 0·5 mm. up to 60 mm. or 70 mm. in diameter at a distance of from 250 mm. to 2,000 mm. or more. As the visual angle employed depends on the diameter of the test-object and its distance from the eye, a wide range is obtained by this means.

Bjerrum's screen was used for the scotomata and the observation of the central field within the 25° circle.

The author reports 24 cases which are divided into four groups, and in each of which detailed histories are provided. The first group contains 10 cases in the later stages, the second group has 6 cases, 5 with scotomata in relatively early stages. Out of these 16 cases, 14 showed the typical clockwise and counter-clockwise progress of the defect in the right and left fields respectively, with relative retention of the superior-nasal quadrant. The third group contained 5 cases of acromegaly and 1 of tumour or syphilis. The fourth group contained 2 cases allied which showed similar progression.

A number of fields are given in colour, and the illustrations of the visual field throughout the paper are accurate and very well done.

Anatomy.—The author gives a careful description of the relations of the optic nerve with the hypophysis. He holds that the optic chiasma lies well behind and above the usual described position. Its posterior edge projects behind the level of the dorsum sellæ to an average of 1·58 mm., and is separated from it vertically by 5 to 10 mm. He emphasises the point that it is the infundibulum and not the hypophysis which is in immediate contact with the chiasma. The former is a vascular structure, and it is closely applied to the posterior surface of the chiasma.

Scotomata.—Scotomata were present in 10 cases, and possibly in others, although not present at the time of examination. They were not found in the very chronic acromegalies, all the cases in which they occurred being of a relatively active type—that is, active pituitary tumours or inflammatory conditions. Five of the cases showed the typical progress, while the other 5 were irregular. Under radiography the author mentions that the presence of a trabecular shadow in the sella turcica is due to the presence of air cells in the temporal bone. The most striking factor of his skiagrams was the great variety of conditions which may be associated with the same type of changes in the fields. This type of field change occurs where the primary condition is a mere enlargement of the hypophysis as in the usual form of acromegaly, or a spreading tumour in the chiasmal neighbourhood (excepting laterally placed tumours), or post-nasal sinus disease, and, finally, in lues basilaris. Pronounced sellar deformity is practically always associated with marked field defects, but the converse is by no means true.

The author considers that the best explanation of the condition is that of local intoxication. He discards the possibility of traction or venous congestion being sufficient. He does not consider that pressure is sufficient, although it is most probably the factor in the later stages. The circular course of the defect in the fields clockwise in the right and counter-clockwise in the left is best explained by the arrangement of the nerve fibres in the chiasma. Up to a certain point the production of similar fields in inflammatory and tumour cases may be explained on the theory of chiasmal retrobulbar neuritis set up by toxins. In tumour cases, especially of the progressive group, it is probable that after some time, varying in different instances, the growth will become large enough to exert a purely mechanical influence, partly pressure and partly traction.

There is no space here for a description of the full elaboration of the arguments, but these will be found in the original paper, together with a full bibliography.

The following are the conclusions, which are partly tentative :—

1. The perimetric defects in bitemporal hemiopia follow a typical or normal course of development. Commencing in the upper-outer quadrant the field is involved in a circular manner, the loss proceeding clockwise in the right field and counter-clockwise in the left, so that the upper nasal quadrant remains longest. This is the typical course and occurs in the majority of cases, but naturally not in all.

2. The central defect or scotoma behaves in the same way, developing like a little field within the field.

3. This type of field defect is due to interference with the chiasmal fibres, but is largely independent of the exact nature of the ultimate cause; it occurs in bitemporal hemiopias from a variety of causes.

4. The immediate cause is very probably a chiasmal neuritis, a lesion comparable to that which, acting in the optic nerve, produces the symptoms of retrobulbar neuritis.

5. The cause of this chiasmal neuritis is not definitely known. In all probability it is set up in some way by pressure in many cases. The access to the chiasmal fibres of irritating toxic substances derived from the causal lesion may be the cause; and the presence of these substances may in some cases indirectly arise from pressure, in some cases the chiasma may directly participate in an inflammatory process. The relation of the infundibulum to the chiasma is very probably of importance.

6. In tumour cases, and probably in some cases without tumour, mechanical pressure effects also act, mainly in the later stages when the tumour has reached a relatively large size.

7. In the later stages the normal type of progress of the field changes may be "swamped" by pressure effects and greatly altered.

8. These observations provide evidence from the clinical side in support of the looped arrangement of the fibres in the chiasma.

9. They also indicate that the papillo-macular bundle forms a little chiasma within the chiasma, and that its fibres are similarly arranged.

—W. B. Inglis Pollock.

Books, Pamphlets, &c., Received.

The Practice of Medicine, by Sir Frederick Taylor, Bart., M.D. Eleventh edition. London: J. & A. Churchill. 1918. (24s. net.)

A Practical Treatise on Fractures and Dislocations, by Lewis A. Stimson, B.A., M.D., LL.D.Yalen. Eighth edition; revised and enlarged. With 475 illustrations and 39 plates in monotint. New York: Lea and Febiger. 1917.

Glaucoma: A Text-book for the Student of Ophthalmology, by Robert Henry Elliot, M.D. With 158 illustrations. London: H. K. Lewis & Co., Limited. 1918. (21s. net.)

The Edinburgh School of Surgery before Lister, by Alexander Miles. With 8 illustrations. London: A. & C. Black, Limited. 1918. (5s. net.)

Military Surgery, by Dunlap Pearce Penhallow, S.B., M.D.Harv. With introduction by Sir Alfred Keogh, K.C.B. Original drawings by the Author. Second edition. London: Henry Frowde and Hodder & Stoughton. 1918. (21s. net.)

Minor Maladies and their Treatment, by Leonard Williams, M.D. Fourth edition. London: Baillière, Tindall & Cox. 1918. (7s. 6d. net.)

Handbook of Operative Surgery, by William Ireland de C. Wheeler, B.A., M.D. With an introduction by Surgeon-General Sir Alfred Keogh, G.C.B. Third edition. London: Baillière, Tindall & Cox. 1918. (10s. 6d. net.)

The "Nauheim" Treatment, in England, of Diseases of the Heart and Circulation, by Leslie Thorne Thorne, M.D. Fifth edition. London: Baillière, Tindall & Cox. 1918. (5s. net.)

Burns and their Treatment, including Dermatitis from High Explosives, by J. M. H. MacLeod, M.A., M.D., F.R.C.P. Oxford War Primers. London: Henry Frowde and Hodder & Stoughton. 1918. (6s. net.)

Directions for a Practical Course in Chemical Physiology, by W. Cramer, Ph.D., D.Sc. Third edition. London: Longmans, Green & Co. 1917. (3s. net; interleaved, 4s.)

Surgical Applied Anatomy, by Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D. Seventh edition. Revised by Arthur Keith, M.D., LL.B., and W. Colin MacKenzie, M.D.Melb. Illustrated with 153 figures, including 74 in colour. London: Cassell & Co., Limited. 1918. (10s. 6d. net.)

A Manual of Physics, Theoretical and Practical, for Medical Students, by Hugh C. H. Candy, B.A., B.Sc.Lond. Second edition, enlarged. With a coloured frontispiece and 280 figures in the text. London: Cassell & Co., Limited. 1918. (7s. 6d. net.)

Green's Manual of Pathology and Morbid Anatomy. Revised and enlarged by W. Cecil Bosanquet, M.A., M.D.Oxon., L.R.C.P.Lond., and W. W. C. Topley, M.B., B.C.Cantab., M.R.C.P.Lond. Twelfth edition. University Series. London: Baillière, Tindall & Cox. 1918.

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDED 30TH MARCH, 1918.

	Week ending				
	Mar. 2.	Mar. 9.	Mar. 16.	Mar. 23.	Mar. 30.
Mean temperature, . .	39·1°	37·1°	41·8°	46·5°	42·3°
Amount of rainfall, . ins.	0·55	0·23	0·21	0·11	0·96
Deaths (corrected), . .	314	313	320	340	309
Death-rates, ...	14·7	14·6	15·0	15·9	14·5
Zymotic death-rates, . .	1·1	0·8	0·7	1·2	1·3
Pulmonary death-rates, .	3·0	4·1	3·5	3·3	4·0
DEATHS—					
Under 1 year, . . .	47	43	49	57	37
60 years and upwards, .	39	90	105	104	79
DEATHS FROM—					
Small-pox, ...	...	...	...	...	...
Measles, ...	2	6	7	9	8
Scarlet fever, . . .	...	...	...	1	...
Diphtheria, . . .	5	5	1	1	3
Whooping-cough, . .	13	6	5	13	16
Enteric fever, . . .	2	...	1	1	...
Cerebro-spinal fever, . .	1	1	1	1	1
Diarrhœa (under 2 years of age),	4	2	4	3	4
Bronchitis, pneumonia, and pleurisy, . . .	55	47	60	56	56
CASES REPORTED—					
Small-pox, ...	...	...	...	..	...
Cerebro-spinal meningitis, .	2	3	6	3	4
Diphtheria and membranous croup, ...	25	24	21	26	32
Erysipelas, ...	20	11	14	13	11
Scarlet fever, ...	26	16	27	28	27
Typhus fever, . . .	...	5	4	3	2
Enteric fever, ...	2	2	3	8	3
Phthisis, ...	60	58	54	59	47
Puerperal fever, . . .	1	2	5	8	...
Measles,*	273	228	233	239	192
Ophthalmia neonatorum, .	10	6	11	14	13

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *8th April*, 1918.

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ORIGINAL ARTICLES.

UTERINE FIBROIDS, OR MYOMATA OF THE UTERUS COMPLICATING PREGNANCY, LABOUR, AND THE PUERPERIUM.

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Professor of Midwifery and Gynæcology, The Anderson College of Medicine; Surgeon to the Royal Samaritan Hospital for Women; Examiner in Midwifery to the Central Midwives Board, Scotland.

In the November (1917) number of this *Journal,* there was a contribution by me on "Uterine fibroids: notes on their diagnosis, complications, and treatment based on the observation of 150 cases." The question of diagnosis was then fully considered, with special reference to the position, size, shape, and consistency of these growths. Some points in the differential diagnosis, especially with reference to pregnancy, ovarian tumours, pyosalpinx, &c., were considered. In this contribution myomata of the uterus are specially considered with reference to their complicating pregnancy, and their effects upon labour and the puerperium. Pinard has estimated the frequency of these growths as a complication of labour, and finds that in 13,915 consecutive cases of labour only 0·6 per cent were complicated by these neoplasms. It is a matter of common knowledge that uterine fibroids predispose to sterility, but do not prevent conception. The frequent cause of sterility is the submucous or interstitial growth. Sometimes there is a little difficulty in the diagnosis of an associated pregnancy and fibroid growth, because uterine hæmorrhage sometimes occurs at varying periods due to changes in the lining membrane of the uterus, and the patient thinks that this loss is the usual monthly illness, and does not entertain the thought that she is pregnant. Again, sometimes you have a rapid increase in size of the uterine growth, which suggests the possibility of pregnancy, and one must carefully examine bimanually, and palpate the uterus to find out soft areas scattered through the harder fibroid nodules. Another point in the differential diagnosis of pregnancy is, that small subserous fibroids are mistaken for fœtal parts, and consequently a diagnosis of plural pregnancy is entertained.

CHANGES PRODUCED BY PREGNANCY ON THE TUMOUR.

Sometimes torsion of the pedicle of a subserous fibroid occurs as the result of a softening of the uterine muscle in pregnancy, and a rare condition of torsion of the uterus on its cervix has been recorded. The following case illustrates an error in diagnosis due to the result of torsion of the pedicle in a subserous fibroid associated with pregnancy:—

Mrs. A., aged 33 years, iii-para, was seen by me on account of acute abdominal pain, and the history presented all the features of a ruptured ectopic gestation. There had been two months' amenorrhœa: as the result of lifting some heavy object from the floor she was seized with pain in the lower abdomen, and this was accompanied by free uterine hæmorrhage. The pain steadily increased in severity, and the uterine hæmorrhage also increased. On examining her *per vaginam* the uterus was found to be enlarged, corresponding to the size of a two months' pregnancy, and a mass was found in the pouch of Douglas.

which was somewhat mobile, but not exquisitely tender. On examination of the abdomen by palpation there was marked tenderness and rigidity over the whole iliac region. I saw her some twelve hours after the onset of her illness, and as the symptoms were increasing in severity I immediately performed laparotomy, and discovered that the mass in the pouch of Douglas was a subserous fibroid, the size of a large orange, with marked torsion of its pedicle. Prior to operation I commented that the mass in the pouch of Douglas had neither the usual consistency of a tubal mass, nor was it so exquisitely tender as is usually the case in tubal abortion or rupture with pelvic hæmatocele. The case was evidently one of threatened abortion with fibroid tumour, and eventually the abortion was naturally completed the day following the operation.

Another effect of pregnancy on these tumours is to cause a rapid increase in size of the growth, and sometimes a very marked abdominal extension. These tumours also undergo change in shape due to the pressure of the growing ovum, and they also become markedly flattened. Again, the tumcur may increase so much in size as to become impacted in the pelvis, and give rise to symptoms of a very severe nature.

The following two cases illustrate this impaction of a uterine fibroid complicating pregnancy:—

Retention of urine.

1. Mrs. A., aged 36 years, had been married for several years, and was sterile. She was suddenly seized with retention of urine, and on interrogating her I found that she had had two months' amenorrhœa. Examination of the abdomen revealed a soft cystic swelling extending from the symphysis pubis to midway between it and the umbilicus. On examining *per vaginam* it was found that the pelvis was filled by a soft uterine swelling. The pelvic cavity was almost completely filled by this tumour. As the retention was complete, and all methods of evacuating the bladder had been tried save catheterisation, the catheter was passed and about a pint and a half of urine drawn off. The retention, however, continued, and under an anæsthetic the uterine swelling was lifted out of the pelvis, but on removing the pressure it immediately returned

to its normal position. A large ring pessary was inserted into the vagina, and this seemed to act as a support, and eventually the retention was overcome. The patient was carefully watched, and it was discovered that the uterus enlarged very rapidly, and, in short, the question of pregnancy was accurately determined. Labour came on at full time naturally, and the patient made a good recovery.

Partial intestinal obstruction.

2. Mrs. B., aged 34 years, was seen by me on account of "incomplete" intestinal obstruction and great rectal tenesmus. There was a history of two and a half months' amenorrhœa, and she believed herself to be pregnant. On examining the abdomen by palpation there was no evidence of any unusual condition. On examination *per vaginam* the pelvis was found to be completely filled by a soft cystic swelling, which was painless on pressure, and was evidently firmly attached to the uterus. The body of the uterus could be palpated in front of this swelling. On examination under an anæsthetic it was found impossible to lift this swelling out of the pelvis, and it was accordingly considered necessary to perform laparotomy.

The abdomen was opened in the middle line, and a large interstitial fibroid which was becoming partly subserous was found protruding on the posterior wall of the uterus, extending from the fundus uteri down to the junction of the body with the cervix. Myomectomy was performed, and the abdomen closed in the usual manner. During this operation the uterine cavity had been slightly encroached upon, and as the result there was free hæmorrhage from the vagina. This was controlled by vaginal packing, and twenty-four hours after operation the pregnancy was naturally terminated, the fœtus and its membranes coming completely away. The patient made an uninterrupted recovery.

Changes which the Tumour Produces on the Pregnancy.

Sometimes as a result of a fibroid of the uterus complicating pregnancy, accidental hæmorrhage has been known to occur, and the pregnancy has prematurely ended. It is a recognised fact that painful and protracted menstruation, with a history either of sterility or early miscarriages, is exceedingly suggestive of fibroid tumours of the uterus. The frequency of abortion is due to the hæmorrhagic change of the endometrium, so frequently associated with myomata. Uterine fibroid, when situated on the posterior wall of the uterus, may produce a retroversion and this may lead to an incarceration of the gravid uterus.

TREATMENT OF UTERINE FIBROIDS OCCURRING DURING PREGNANCY.

As a rule these growths can be left alone, expectant treatment being in the most of cases all that is required, no difficulty being met with during pregnancy. If operative treatment, such as myomectomy, is undertaken, premature labour is likely to result. The operative treatment must be carried out if there be any—

1. Pressure symptoms.
2. Torsion of the pedicle or of the uterus.
3. Degeneration of the tumour.
4. If it is apparent that the tumour is so situated that the child cannot be born by the natural passages.

Pressure symptoms.—This requires, as a rule, abdominal section, and as in the cases already quoted may be dealt with either by removal of the tumour, by ligaturing the pedicle, or by enucleation of the tumour. It is always wise to try and push these growths out of the pelvis *per vaginam*, after having the patient deeply anæsthetised.

Degeneration.—If the tumour can be enucleated this may be all that is required. If the pregnancy has proceeded so far that the child is viable, in certain cases it is wise to perform Cæsarean section, and then remove the uterus by subtotal hysterectomy.

Torsion of the pedicle or of the uterus.—A twisted pedicle should be ligatured, and the growth taken away.

Torsion of the uterus upon its cervix with a viable child may demand Cæsarean section, followed by hysterectomy.

Where it is apparent that the tumour is so situated that the child cannot be born by the natural passages.—If the obstruction is such that delivery at term is either impossible or unsafe, Cæsarean section should be performed a day or two before full time, and the uterus treated by such operation as the situation of the growth demands, *i.e.*, either a myomectomy or hysterectomy. If a myomectomy can be undertaken safely, and the uterus saved, this is the operation of election. Many tumours have been so enucleated and a serviceable uterus left remaining in which a future pregnancy could occur. The risk of uterine bleeding in these cases is not great, as the uterine retraction is generally sufficient to control any serious hæmorrhage.

The following case illustrates very clearly the difficulty which would be encountered where a large fibroid grows from the lower uterine segment:—

Mrs. C., aged 38 years, was first seen by me on account of menorrhagia. On examining her *per vaginam* I found that there was a large uterine fibroid which filled the pelvic cavity. I put her upon medical treatment to see what effect there would be in controlling the hæmorrhage, and on being questioned by her as to the possibility of her becoming pregnant I said it was possible, but that possibly she would miscarry. Some months after I was informed that she had missed two periods, and was asked to guide her as to what should be done. The treatment employed was purely expectant treatment, and as the uterus began rapidly to develop, and the tumour to flatten out, it was quite obvious that pregnancy was going to proceed. A month before full term I examined her with care along with her medical attendant, and we came to the conclusion that it was unlikely that a living child could be born by the natural passages. We accordingly agreed to perform Cæsarean section some days before term, and then be guided as to how we should deal with the uterus. This we did, and were successful in obtaining a living child; on inspecting the uterus afterwards we found it impossible to deal with the multiple fibroids successfully other than by hysterectomy. Accordingly subtotal hysterectomy was performed, and the mother made an uninterrupted recovery. Both the mother and child have done well.

CHANGES WHICH OCCUR IN THE TUMOUR DURING LABOUR.

Under ordinary circumstances no difficulty is encountered. The growth may be large, but not sufficiently large to cause any dystocia, but from instrumental interference or from pressure of the child's parts upon the tumour considerable bruising may result and sepsis supervene.

INFLUENCES OF THE TUMOUR UPON LABOUR.

1. May cause obstruction of delivery.
2. May cause malpresentation.
3. May cause hæmorrhage.

Obstruction.—If a submucous myoma be situated below the presenting part, or if a subserous tumour be situated in the cervix, great difficulty or complete obstruction to the birth of the child will arise.

Malpresentation.—Olshausen found that in reported cases only 53 per cent of vertex presentation were found as compared with 24 per cent and 19 per cent of breech and transverse presentations respectively.

Hæmorrhage.—Hæmorrhage may be either intra-uterine or intra-abdominal, particularly arising from omental adhesions to the uterus. Again these tumours may be associated with inversion of the uterus, and cause marked hæmorrhage.

POST-PARTUM HÆMORRHAGE ASSOCIATED WITH MULTIPLE UTERINE FIBROIDS.

Mrs. P., aged 34 years, had a previous pregnancy some fourteen years before. For some years following this pregnancy her periods were quite normal, but eventually there was an acquired dysmenorrhœa and menorrhagia. She was sent to me for treatment, and I raised the question of having the uterus removed on account of several fibroid growths, which were easily felt on palpation. Operation was not agreed to, and consequently she was treated medically. She eventually became pregnant after her long period of sterility, and her pregnancy was uneventful; but her labour was an exceedingly tedious one, lasting over a period of three days, due to exceedingly weak uterine contractions. She eventually delivered herself naturally of a living child, but during the third stage of labour there was a very serious post-partum hæmorrhage due to the imperfect retraction of the uterus. The hæmorrhage for some time was controlled by bimanual compression on the uterus, and finally by stuffing the uterine cavity with iodoform gauze. It was found necessary to transfuse the patient with normal saline, and it was with considerable difficulty that she recovered primarily from her hæmorrhage and eventually from her marked anæmia, which almost simulated a pernicious anæmia.

Treatment.—Intra-abdominal bleeding may require laparotomy, and securing the bleeding point. Post-partum hæmorrhage may be met by the usual methods for controlling this condition. The knowledge that the patient had a fibroid tumour would make one very alert in dealing with the third stage of labour and manual control of the uterus, along with the use of such drugs as ergotin and pituitrin.

Obstruction.—Obstruction of labour may be met by pushing the growth up after the patient has been carefully anæsthetised, and seeing if it is possible to deliver by forceps. It is necessary to bear in remembrance that considerable damage may be done to the tumour by intra-uterine manipulation. It is, however, quite justifiable to use these methods, and to watch carefully afterwards for any sign of infection of the growth. Undoubtedly the best results in obstruction by uterine fibroid are obtained by laparotomy, removing the child by Cæsarean section, and treating the uterus by myomectomy or hysterectomy as occasion demands.

The following case is illustrative of the difficulties met with when there is an obstructing fibroid:—

Mrs. H., aged 36 years, three children born at full term, and followed in due course by four successive miscarriages, all being about the end of the third month. The last miscarriage, prior to the pregnancy in which I was called to see her, occurred twelve months previously. When seen by me the patient was in labour, the cervix was markedly distorted in the corner of the right lateral fornix, and the pelvic cavity was filled by a round hard tumour, which was firmly attached to the uterus. Examination of the abdomen revealed enlargement of the uterus up to the ensiform cartilage. After waiting for many hours, the patient having increasing uterine contractions with very great pain, since no dilatation of the cervix was being effected, and it was impossible to push the tumour out of the pelvis, it was agreed to perform laparotomy. This was done, and after Cæsarean section had been performed and a living child obtained, the uterus was found to contain multiple fibroids, subserous and interstitial and submucous. It was agreed to perform a subtotal hysterectomy. This was done, and the patient made an uneventful recovery.

Malpresentation.—The treatment in malpresentation differs little from that of an ordinary case, provided the child can be born *per vias naturales*; the only danger is that the handling may cause bruising and subsequent infection of the tumour.

CONDITIONS WHICH MAY ARISE DURING THE PUERPERIUM.

As already stated, sepsis may arise after a full time or premature expulsion of the fœtus, with a corresponding infection of the tumour. This may give rise to a suppuration in the tumour, which may cause it either to be formed into an abscess cavity or to be discharged entirely from its capsule. In a case already recorded by me in my previous contribution the patient died from acute sepsis due to suppuration of an interstitial fibroid during the puerperium.

The case referred to was a Mrs. K., age 33 years, and had been pregnant three years previous to the present confinement. This first pregnancy had terminated some time during the sixth month. The pregnancy associated with the present illness had terminated at the twenty-sixth week. When seen five days after her labour she was acutely ill, with repeated rigors, high temperatures, and pulse varying from 120 to 140 per minute. The abdomen was distended, the uterus large, soft, and semi-fluctuant. The impression conveyed to the examining hand was exactly that of a cyst. Careful enquiry brought out the fact that for some days prior to labour there had been right-sided abdominal pain, with marked tenderness and rigidity of the abdominal wall. This condition had persisted up till the onset of labour, and then the abdominal condition had become rapidly worse. A provisional diagnosis of an acute appendicitis was made, and an operation was decided upon. The abdomen was opened in the middle line and the parts carefully inspected. A right-sided adnexal mass was discovered and found to be full of pus: the uterus was manifestly infected, and was removed along with both adnexa. On section of the uterus the soft cystic swelling in the uterine wall was found to be an abscess cavity in an interstitial fibroid. There was no appendicitis. The patient died the following day from acute sepsis.

Apart from torsion of the pedicle there may be a marked necrobiosis. A submucous myoma may be extruded during the puerperium. The following case is an example:—

Mrs. A., aged 32 years, had the misfortune to have as her first pregnancy a tubal gestation with rupture: she had a laparotomy and the tubal sac was removed; from this she made an excellent recovery. Some years afterwards she again became pregnant, and she miscarried at the end of four and a half months. The placenta had been firmly adherent to the uterus, and her medical attendant had to separate it manually. I was asked to see her a few days after her confinement on account of septic infection, which was accompanied by pain, fever, and great uterine tenderness, along with a foul uterine discharge. With careful local douching, and the usual treatment of a septic case, her condition very markedly improved, and about a week after my first visit there was extruded from the uterus first one and then a second submucous myoma, the size of a small tangerine orange. After the expulsion of these growths, the puerperium went on normally, and the patient made an excellent recovery.

It is necessary to exercise the greatest care in diagnosing the extrusion of a submucous fibroid during the puerperium from a complete inversion of the uterus. A case of inversion of the uterus which I reported in this *Journal* some time ago very closely simulated a sloughing fibroid, and had the greatest care in making a differential diagnosis not been taken a serious error might have been incurred. The presence of a fibroid may occasion not only sepsis during the puerperium, but may be responsible for displacement of the uterus, subinvolution of the uterus, or the more serious condition of secondary post-partum hæmorrhage.

Treatment.—The mere knowledge that the patient has had a fibroid uterus, and that she has become pregnant, will put the attendant on his guard for the complications which are likely to arise during the puerperium. Sepsis, and torsion of the pedicle, should be treated as a rule by laparotomy; submucous fibroids should be removed *per vaginam.* It is always wise to make a careful examination in case of septic discharge from the uterus to see that nothing has been left behind. The following case is an instance of a lobe of placenta being left behind in a fibroid uterus:—

Mrs. L., aged 35 years, was known to have multiple fibroids in her uterus for many years prior to her marriage. There had been a long history of dysmenorrhœa accompanied by a profuse menorrhagia. She eventually became pregnant, and had an uneventful pregnancy, and a comparatively speaking easy labour; the placenta was supposed to have come away completely along with the membranes. For the first four or five days of the puerperium she had great uterine pain, and she stated she felt as if there was something to be forced out of the uterus, as the pains were just like labour pains. The profuse blood-stained discharge which had remained became very offensive, and it was necessary to explore the uterine cavity. A complete placental lobe was removed manually from the uterus, and eventually the patient made a good recovery.

It is interesting to note in this case that after the puerperium there was marked atrophy of the largest fibroids in the uterus.

The conclusion of the matter is that uterine fibroids complicating pregnancy do not necessarily cause difficult labour, but the knowledge of their presence should keep the medical attendant alive to the fact that operative interference may be required in place of the usual expectant method.

RICKETS IN ITS RELATIONSHIP TO HOUSING.*

By LEONARD FINDLAY, M.D., D.Sc.Glasg.,
Visiting Physician, Royal Hospital for Sick Children, Glasgow.

That rickets is a most freqent disease nobody who has had any opportunity of investigating the question in one of the large industrial centres in Europe and America will doubt, but it is as yet impossible to give any definite idea of its percentage incidence in the general population. I think we may safely say, however, that it affects at least 50 per cent of the children of our industrial populations. At a medical outdoor clinique of a children's hospital in such a city as Glasgow it is of the rarest occurrence to find a child who does not present some degree of this malady.

Rickets is not a disease which kills directly, but it makes the subjects of it specially liable to the complications of the infectious fevers, *e.g.*, the respiratory complications of measles and whooping-cough, and renders recovery from these same complications less likely, and thus indirectly is responsible for a considerable death-rate. During later childhood, too, it is answerable for much expenditure of money on the part of the community in the providing of special schools for cripple children. And, finally, in adult life it adds greatly to the dangers of child-bearing.

One needs therefore no excuse for bringing this disease under the notice of this Conference if housing in any way can be shown to be contributory. It is interesting to note in passing that Hansemann in 1906, in true German fashion, stimulated interest in the Fatherland by stating that the deformities and dwarfism consequent on this disease were responsible for numerous rejections from the army.

Many are the theories which have been propounded to account for this disease, and in England and America the one that has received most support within the last two or three decades is that which accuses some dietetic error. The striking fact that it is a disease essentially of the poorer classes, and is only seldom met with in the rich, should make us hesitate to adopt such an explanation, as I think it exceedingly doubtful if the children of the rich, generally speaking, are more properly fed than those of the poor.

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* Read before Infant and Welfare Conference on Housing in Edinburgh, 13th March, 1918.

Some years ago I approached this subject, "The etiology of rickets," from the experimental standpoint, and discovered accidentally that with confinement and lack of exercise any young dog could be made rachitic. Following the suggestions which had been made by previous workers, I in the first place attempted to induce the disease by feeding the animals on a diet poor in fat, *e.g.*, skim milk and rice and water, but I was only successful in causing diarrhœa and marasmus. The control animals, however, those which had been normally fed, all developed marked rickets. One of these control animals was destined to be the pet of a friend and he had taken it out occasionally for walks, and, as it was distinctly less rachitic than the others, the idea suggested itself to one's mind that herein might lie the cause of the disease. This animal was therefore allowed still more exercise for the matter of a week, when all appearances of rickets practically disappeared. On once more confining it with its brothers and sisters it again rapidly became affected. Thereafter I induced rickets in two sets of pups by simply confining them. All the animals, control and otherwise, were similarly fed on porridge and milk, occupied the same rooms, inhaled the same air—the only difference being that some received exercise and others did not. Those which were allowed exercise remained healthy, while those which were not became rachitic.

Since that time I have heard of several instances where rickets has developed spontaneously in animals, and so important do they seem to me in the present discussion that I cannot refrain from recording two of them.

Dr. John Fergus, of Glasgow, at a discussion on the cause of rickets before the Glasgow Medico-Chirurgical Society, related how during one summer his son and niece had each a fox terrier pup of the same breed and of about the same age. His son was able to run about with his pet, and thus it obtained plenty of exercise; but his niece, who was unable to do this, had hers tethered to a garden seat in order that she might always have it by her. Both were fed exactly alike, so far as could be ascertained, and the only difference in the treatment of the two animals seemed to be in the amount of exercise allowed. By the end of the summer the boy's dog was a fine healthy animal, whereas that of the little girl had become so deformed from what Dr. Fergus described as rachitic curvature of the bones that it had to be destroyed.

The following is an abstract from a letter which I received from a farmer in the West Coast of Ireland shortly after the publication of my paper on experimental rickets:—"I have learned of a case of rickets in a pup about which I am sure you would like to hear. This pup was fed on a perfect food—new milk—but from the very start was kept confined in the bottom of a barrel, where it was quite impossible it could exercise itself. One swallow does not, of course, make a summer, and one case of the kind does not prove that rickets is caused by want of exercise, but in the light of your investigations and the great rarity of this disease in the West of Ireland (I never having seen a case of rickets in the West of Ireland in man or beast) has weight."

How can we correlate these experimental findings with what occurs in the human subject, and do they help us to understand the production and distribution of this disease in man?

During the years 1912, 1913, and 1914 I conducted a statistical study of the dietetic and home conditions of 500 rachitic children, and came to the conclusion that the chief factors in the production of the disease were overcrowding of the home and insufficient exercise in the open air. In order to amplify this limited study and to test the truth of these conclusions, I, along with Professor Noël Paton and Miss Ferguson, have conducted during the last three years, on behalf of the Medical Research Committee, a more extensive research into the conditions, dietetic, hygienic, &c. of actively rachitic and non-rachitic children belonging to the same social class. My earlier results had the drawback that they had not invariably been controlled by comparison with the conditions prevailing in the case of non-rachitic children of the same social class, a desideratum which was supplied in the later study. The factors which seemed to be of paramount importance, were in order of significance:—

1. Improper housing.
2. Absence of facilities for open air life.
3. Imperfect parental care.

Poverty *per se* did not seem to be a factor of any importance, as the relative incomes of the rachitic and non-rachitic families did not show any great differences. The amount spent on food was directly proportionate to the size of the family, but that spent on rent was distinctly greater in the non-rachitic than in the rachitic family. The dietary studies showed pretty conclusively that the great majority of the rachitic children were quite as suitably fed as the non-rachitic, and in not a few instances were even more liberally nourished, both as regards quality and quantity, so that the conclusion seems warranted that diet has no bearing on the etiology of rickets.

1. *Improper housing.*—In the first place it was found, as previously mentioned, that the rachitic families did not spend as much on rent as the non-rachitic families, and they would thus be supplied with inferior houses. The markedly rachitic families on the average spent 3s. 10½d. per week on rent, whereas the non-rachitic families spent 4s. 4½d. This was perhaps only natural, as assuming that the relative incomes were the same, as in many instances they were, less would be available for any individual item, since the rachitic families were on the whole larger, numbering 4·37 children on the average as against 3·07 for the non-rachitic families.

Rachitic and non-rachitic families were found, however, living in the same districts, inhabiting the same streets and even houses on the same stair. Neither the number of stairs up that the house was situated, nor the exposure, nor the question of through and through ventilation seemed to have any influence on the frequency of the disease, nor did the number of apartments per house have any direct bearing. Quite otherwise was it, however, when the number of persons per apartment and the general cleanliness and care of the home were considered.

In my original investigation I showed that the frequency of rickets was directly proportionate to the air space in the home available per person, and the later investigation carried out in association with Professor Paton and Miss Ferguson completely corroborated this finding. Of the markedly rachitic children, 3·93 persons inhabited each apartment, whereas 3·0 persons per apartment was the average for the non-rachitic families. When the average air space per person was estimated the results were even more striking. In the case of the markedly rachitic families this figure was 422 cubic feet per person, in the case of the mildly rachitic 483 cubic feet, as against 625 cubic feet per person in the case of the non-rachitic families. And, finally, only about 50 per cent of the houses inhabited by the rachitic families could be described as clean and tidy, whereas 85 per cent of those of the healthy children were clean, well ventilated, and well furnished. About 30 per cent of the homes of the rachitic children were much neglected, dirty, and bare with the bed clothes insanitary and the atmosphere stuffy.

2. *Opportunities of open-air exercise.*—In my original investigation the extent to which the rachitic children were confined indoors (and in this connection let us remember the character of the homes) was most striking, and is confirmed by the later studies. Nearly *50 per cent (45 per cent)* of the rachitic children were admittedly not taken out, and only *30 per cent* seemed to be sufficiently exercised in the open air, whereas when this factor was investigated in the case of the healthy non-rachitic children, *86·5 per cent* were properly exercised in the open, only *4 per cent* not receiving the necessary airings. This factor is thrown into still greater relief when one considers the conditions previous to the development of the disease and during its recovery.

	(*a*) Active Stage.	(*b*) Healing.
Child taken out much, .	27 per cent.	63 per cent.
,, ,, ,, little, .	15 per cent.	16 per cent.
,, ,, not at all, .	58 per cent.	17 per cent.

The seasonal incidence of the disease is undoubtedly to be attributed to this factor. Rickets in the active stage is met with much more frequently during the spring than during the late summer and autumn, thus appearing after the inclement months of the year when confinement indoors is most likely to occur.

This seasonal incidence has been remarked upon by many authors. Von Hansemann states that almost all children of the hospital class born during the autumn and dying during the following spring show evidence of rickets, whereas those born in spring (April to May) and dying in the autumn are free from the disease. He says that he found the most severe examples in children who were born in spring and dying at the age of 1 year. Schmorl has also published some interesting results on this aspect of the problem. He examined histologically the bones of all children dying under 4 years of age in Dresden Hospital over a period of four years. His results show that although rickets may apparently develop at any season of the year examples of healing rickets are more frequent during the late summer and autumn (July to October), and examples of active rickets most frequently during late winter and spring (January to May).

When we compare the health of the children in a garden city like Port Sunlight, situated on the fringe of Liverpool and inhabited by the working classes, the absence of rickets and the further absence of those same factors which we have incriminated as the cause of the disease accentuate if possible the deplorable conditions under which the working classes of our cities live.

The garden city house differs widely from the home of the same class of tenant in Liverpool, and even more from that in Glasgow. The village of Port Sunlight occupies an area of 140 acres, and has a population of over 4,000. At present there are 800 cottages and never more than 10 to an acre. They are built in blocks of 4 to 7, separated by wide roadways and large gardens. All the houses have front lawns 18 to 30 feet wide. The houses themselves contain a living-room, a pantry and a scullery downstairs, and 3 bedrooms upstairs. Some have, in addition to the living-room or kitchen, a parlour on the ground floor. The average cubic space per person in 50 houses visited was found to be 1,568 cubic feet, which is three or four times what the rachitic families in Glasgow enjoyed. The striking points in the homes were the airiness, the cleanliness, and the great facilities for the children playing about. The average rental for the house was 6s. to 7s. weekly, which is almost double what was paid for the homes inhabited by the rachitic families in Glasgow. The average income was not much more, varying between 28s. and 46s per week.

The fifty families visited consisted of 180 children, and of these only 6 presented some evidence of the disease. Just as in Glasgow, the homes inhabited by these 6 children were the least satisfactory, and in 4 instances the mothers admitted that the children were not taken out regularly, either owing to illness on the part of the child or herself.

The incidence of rickets would therefore seem to a great extent to be a question of economics. The average working man's wage—at least in peace time—is not sufficient to enable him, after paying all other necessary expenses, to rent a house suitable for the rearing of a healthy family. In Port Sunlight, where proper housing conditions do prevail, the householder pays in rent almost double the amount expended by his city (Glasgow) fellow workman, and yet their increased rent only represents one-half the value of the normal interest on the capital outlay, the other half being paid by Messrs. Lever Bros., the proprietors. The home of the Port Sunlight worker, however, is well worth the greater outlay, and the improved health of the children amply repays the increased expenditure. There seems, then, no other way out of the difficulty at the present time than to raise the wages of the working man sufficiently to enable him to pay the higher, and, it must be admitted, the necessarily higher rent.

A consideration of the experimental results, of the investigations of the home conditions of rachitic and non-rachitic children in Glasgow, and of the health of children in the garden city Port Sunlight, warrants the conclusion, I think, that whatever the exciting cause of rickets be, the disease is fostered by bad housing, overcrowding, and want of facilities for open air exercise. It is possible, of course, even for the very poor to rear non-rachitic children in the average Glasgow tenement of the poorer districts, but it requires energy and intelligence on the part of the mother to overcome the adverse influences of her surroundings; nevertheless, until proper housing and reasonable facilities for outdoor life are provided it is vain to expect that more than a limited number of poor parents in towns will succeed in rearing non-rachitic children. It is unfortunate for the future of the race that the children, which are a nation's greatest asset, should be housed under conditions which make their well-being so dependent on the intelligence and energy of their parents. The want of care on the mother's part is usually not due to indifference to her responsibilities, but simply to the fact that as a result of her unfavourable surroundings she has lost all interest in life and the vitality to contend against them. How many of us under similar conditions would retain our hearts in the great struggle?

The remedy lies in the making of these conditions as stimulating as possible, in providing everything that will lighten the task of the mothers of our race, which task in the case of the wife of the poor working man or labourer is certainly herculean, in approximating the conditions of her home as nearly as is consistent with reason to those of her more fortunate and wealthier sister; in short, to allow our poor working classes to inhabit a garden city.

AN UNUSUAL CASE OF HÆMATEMESIS AND HYPERPYREXIA, PROBABLY OF HYSTERICAL ORIGIN.

By JOHN MUIL MELVIN,
Formerly Resident Physician, Western Infirmary, Glasgow.

This rare and interesting case occurred a few months ago in the Glasgow Western Infirmary in the wards of Professor T. K. Monro, to whom I am indebted for permission to publish it.

Mrs. Jeanie S., aged 31 years, was admitted to the Western Infirmary on 27th November, 1917, with a complaint of vomiting of blood.

From the history of the case, it appears that patient had put up blood in considerable quantity by the mouth on rare occasions during the twelve months preceding her admission, and that, in the week before admission, three somewhat copious hæmorrhages had occurred. The onset of hæmorrhage was stated to have been at all times sudden and unexpected, and quite unassociated with any symptoms which might have been indicative of either gastric or pulmonary disease. There had been no hæmorrhage from any other situation, and menstruation had continued normal.

Previous to the first attack of vomiting of blood, patient had enjoyed the best of health.

With regard to patient's family history, her sister and two of her own children had died of consumption, and one of her two surviving children was stated to be suffering from tuberculosis of the lungs.

The social conditions seemed to be satisfactory.

On admission to the Western Infirmary her temperature was 98·4°; pulse, 80; and respirations, 20. Patient, who felt weak and somewhat collapsed in consequence of the recent loss of blood, looked a healthy and well-built woman, and nothing in her appearance or behaviour suggested anything of the neurotic temperament.

Examination of the various systems revealed practically no abnormal signs.

The heart's action was regular, and there was no cardiac enlargement. A coarse systolic murmur was heard over most of the cardiac region, the site of maximum intensity being at the pulmonic area.

Examination of the lungs yielded negative results, and the throat and nose also seemed to be normal.

The tongue was moist and clean, and the gums healthy; while the teeth, though of fair quality, were deficient in number. The appetite was moderately good, and the bowels regular in their action. Liver, kidneys, and spleen showed no evidence of disease, and in other respects, also, the abdomen seemed to be normal.

The skin appeared healthy and free from petechial or other eruption. There was no enlargement of superficial lymph glands.

Neither subjectively nor objectively was there any abnormality in the central nervous or sympathetic nervous systems to be made out.

The condition of the urine was normal.

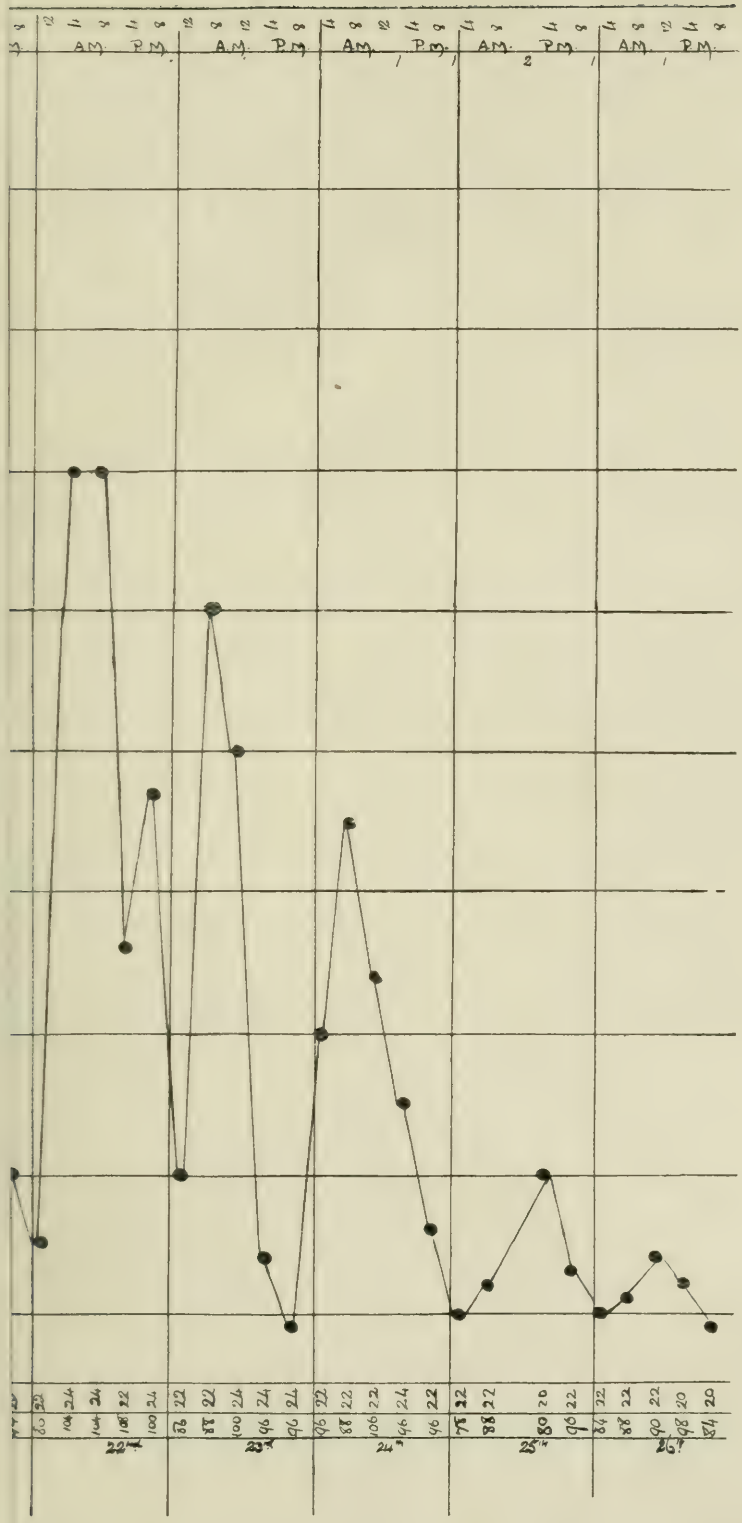
On the day of admission and on each of the three following days patient brought up about a teacupful of bright red blood, examination of which, microscopically and otherwise, failed to give any clue as to its probable source. The blood, on these occasions, seemed suddenly to well up in the mouth, and only afterwards did retching or vomiting occur. Examination of whatever scanty sputum was at any time available revealed no indication of the presence of tubercle bacilli.

X-ray plates of the stomach did not suggest any pathological condition of the organ, nor did a skiagram of the thorax show any certain abnormality.

The source of the hæmorrhage remained a puzzle. Repeated careful examinations of alimentary, circulatory, and respiratory systems threw no fresh light on the nature of the case. Examination of the blood afforded no assistance of a positive character. Such conditions as purpura hæmorrhagica and scurvy one had no difficulty in excluding, after consideration of the facts of the case, and in the absence of other signs. The possibility of the condition arising from a varicose condition of the lower œsophageal veins was considered remote, in view of a non-alcoholic history. The regularity of menstruation and its non-association with the hæmorrhages rendered exclusion of vicarious menstruation justifiable. One kept in mind the likelihood of the hæmorrhage resulting from some pharyngeal suction-action, such as has been reported in rare cases of hysteria as giving rise to spontaneous hæmorrhages closely resembling hæmatemesis and hæmoptysis.

Subsequent events, however, were to explain the probable nature of the case. On the evening of 14th December, the temperature, which, apart from two elevations to 99·4°, had up till that time continued normal since admission, rose to 102° and on the following evening to 105·8°, and that without any apparent cause, and with no great discomfort to the patient. This febrile state continued for the following ten days, and the temperature chart for that period bears record of some truly amazing and well-nigh incredible elevations of temperature. Thus, as the accompanying chart shows, there were several elevations to between 107° and 109°. The still higher readings of 109° and 111° were both recorded on the same day; while on another day the mercury twice rose to 110°. But what might be termed the pinnacle of the chart was reached when on 17th December the phenomenal figure of 114° was registered and recorded on two occasions in the course of that day. At that time the pulse-rate did not exceed 104 and the respiratory-rate was 48. On only a few occasions did the temperature drop to normal, and it always quickly shot up again. The pulse- and respiratory-rates, which at no time exceeded 122 and 50 respectively, did not show variations proportional to the varying degrees of pyrexia.

One was immediately forced to consider the possibility of such high records being the outcome of some fradulent practice on the part of the patient, and accordingly every precaution was taken to prevent deception. Thus, the readings were taken simultaneously in axilla, mouth, and rectum, by some one closely and constantly watching by the bedside. No suspicious



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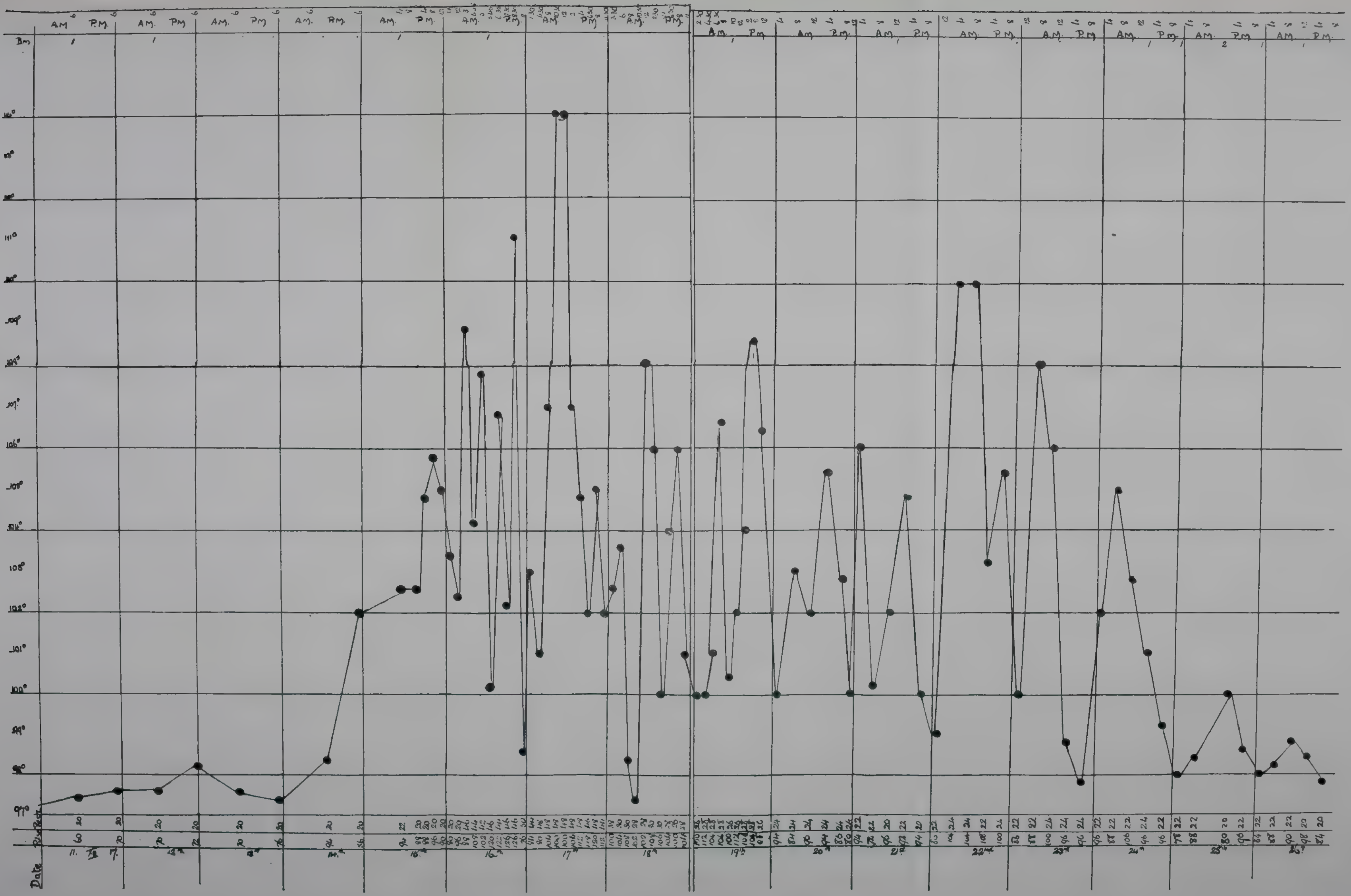

CHART TO ILLUSTRATE MR. MELVIN'S CASE.

discrepancy was ever found between the readings from these situations.

During the whole of the febrile period no changes were made out in the various systems. Only once was there a recurrence of vomiting of blood, but the amount was small. The skin all along remained free from any suspicion of eruption. Examination of the blood at a time of excessive hyperpyrexia failed to reveal any sign of viscosity or dark colouration such as is said to occur in some cases of heat-stroke in which the temperature reaches a great height. There appeared to be no leucocytosis.

The pupils were equal, of medium size, and mobile.

The condition of the patient when the temperature was excessively high was at times pitiful to witness. She tossed about incessantly from side to side in a stuporose state from which she could be roused: with a parched tongue protruded from as parched a mouth, and with the sweat occasionally streaming from a burning skin. The pulse was usually feeble, and on at least one occasion death seemed almost inevitable. Patient was really only once unconscious, and that for a short time when the temperature reached 114°. At times when the temperature was less elevated, patient complained chiefly of headache, weakness, thirst, and a feeling of great heat. After a drop to normal, a feeling of intense chilliness was experienced, but the relief was appreciable and immediate.

The effect of cold sponging on the temperature was entirely beneficial and often very marked, but such antipyretics as quinine were only doubtfully efficacious.

The temperature ultimately reached normal on 26th December, and no subsequent rise occurred. From that time onward patient made steady and uninterrupted progress. Apart from slight epistaxis on 18th January, no further hæmorrhage occurred. Patient, at her own desire, was dismissed on 8th January, looking and feeling well.

This case differs from the hyperpyrexia which occurs in rheumatic fever in several ways. Thus, except possibly for a short time, consciousness was not seriously impaired, and patient would put out her tongue when told to do so. There was no difficulty in feeding her, and she gave due notice of the evacuations. The case is also manifestly unlike anything due to pontine or other intracranial disease. The extreme height which the temperature reached, no less than the complete and comparatively sudden clear-up of the condition without treatment of a specific character, was enough to make one sceptical as to the gravity of the condition.

The conclusion arrived at was that the hæmorrhage, as well as the pyrexia, was of hysterical origin, but the exact source of the blood was never ascertained.

Obituary.

ON SERVICE.

Captain DOUGLAS W. HUNTER, D.S.O.,
Royal Army Medical Corps.

We regret to learn that Captain Douglas W. Hunter, D.S.O., R.A.M.C., has been killed in action. Captain Hunter, who was the eldest son of Mr. Douglas Hunter, 6 Woodcroft Terrace, Jordanhill, graduated as M.B. at Glasgow University in 1901, and was afterwards attached to the North Riding Asylum, Clifton, Yorks. He volunteered in September, 1914, was several times mentioned in despatches, and was awarded the D.S.O. in 1916. He was educated at Hutcheson's Grammar School and at Glasgow University.

THOMAS CRAWFORD BARRAS, M.B., C.M.,
Dennistoun.

We regret to announce the death of Mr. Thomas Crawford Barras, which occurred on 6th April at 5 Seton Terrace, Dennistoun. He was trained at Glasgow University, where he graduated as M.B., C.M. in 1888, and soon afterwards settled in practice in Dennistoun, where he gradually established a reputation as a sound and careful physician. This reputation served him well in the stormy times which followed the passing of the Insurance Act, as he was one of those who declined to become a panel practitioner, a decision which, we believe, he never had cause to regret. Among his medical colleagues he was recognised as a clear and strong-minded man, who never hesitated to act as his conscience directed. For a considerable time before his death Mr. Barras had been unable to practice on account of ill health, and his condition was no doubt aggravated by anxiety about his son, who was severely wounded in the face about two years ago.

CURRENT TOPICS.

Medical Graduation at Glasgow University.—The following degrees in medicine have been conferred at Glasgow University:—

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY
(M.B., Ch.B.)

I. With Commendation.

Alexander Bonham Stich, B.Sc.
Arthur Kennedy, M.A.
Lydia Ida Huber Torrance.

II. Ordinary Degrees.

Annetta Gillies Turnbull Anderson.
Thomas Watson Carstairs.
Malcolm Chalmers, M.A.
Grace Chatterton.
Alexander Ebenezer Cochrane.
Margaret O'Rourke Gallagher.
Mary Brown Gillespie.
George Osmond Grant.
James Charles Hendrie.
Alison Mary Hunter.
Margaret Turner M'George.
William Stanley Lones M'Leish.
Donald M'Queen.
John Nicolson, M.A.
Agnes Petrina Routledge.
Dorothea Helen Suttie.
James Joseph Treanor.
William Andrew Walker.
John Allan White.
George Young.

Distinction for Glasgow Professor.—Professor Bower, of Glasgow University, has been elected a member of the celebrated Scientific Academy of Turin, a distinction which is conferred only upon men of the highest scientific attainments, and which is rarely given to a foreigner.

New Research Fellowships at Glasgow University.—Under the bequest of the late Mr. William Brechin Faulds, writer in Glasgow, four Faulds Fellowships—in Arts, Medicine, Divinity, and Law—have been founded in the University of Glasgow. The Fellowships will be of the value of about £200 a year, and each will be tenable for three years. Candidates must have recently graduated or completed the full curriculum for a degree in their Faculty. In considering applications the Faculty will take into account the candidates' general academic record, the evidence of their capacity for advanced study, inquiry, or research, and the results of any independent work, published or unpublished, which they may have undertaken. The Faculty may also, if it thinks fit, arrange for such trial and oral or practical examination as may be necessary. Each Fellow is to devote himself to some branch of advanced study, inquiry, or research approved by the Senatus, under the general direction of a professor or University lecturer in one of the departments of study. He may be authorised or required to carry on his work during one year elsewhere than in Glasgow, and to deliver lectures at the University in some subject connected with his special work. He is not to engage in professional work or practice, or in any occupation in addition to his Fellowship work, unless the Senate is satisfied that such occupation is expedient in the interest of his special duties as Fellow.

The recent institution of a Ferguson Research Fellowship for Applied Chemistry, together with the establishment of the Faulds Fellowships, places periodically a valuable endowment for advanced study or research at the disposal of each of the five Faculties of the University. More of such foundations are, however, necessary, in order to ensure that in every year the most promising graduates in each Faculty should be enabled, before entering on a bread-winning career, to apply themselves for a time to the advancement of knowledge and discovery under the auspices of the University. The new Fellowships are of somewhat greater annual value than the Carnegie Fellowships, which at present yield £150 a year. It is probable that the first election will be postponed until candidates now on military service shall have returned.

AMERICAN AMBASSADOR—HONORARY DEGREE FROM GLASGOW UNIVERSITY.—Dr. Walter Hines Page, the American Ambassador, had arranged to visit Glasgow on 27th March for the purpose of delivering an address to the Royal Philosophical Society. Exigencies of State obliged him to postpone the visit for a time, but he still hopes to keep his engagement at an early date. Meanwhile the Senatus Academicus of the University has offered him the honorary degree of Doctor of Laws in recognition of his eminence as a man of letters and a statesman, and Dr. Page has cordially accepted the proposal. The degree will be conferred by the Vice-Chancellor at a special assembly of the University on the occasion of the Ambassador's next visit to the city.

Dr. Page, who has represented the United States in this country since 1913, is a native of North Carolina, and an alumnus of Johns Hopkins University, Baltimore. He is a member of the great publishing firm of Doubleday, Page & Co. He has been editor, in succession, of "The Forum," "The Atlantic Monthly," and "The World's Work," and has written a notable book on "The Rebuilding of Old Commonwealths," and at least one novel of distinction. Honorary degrees have already been conferred upon him by Oxford, Cambridge, Aberdeen, and Edinburgh, and by several American Universities. Mrs. Page is a direct descendant of Dr. John Wilson, a Glasgow graduate, who migrated to America in the last century.

APPOINTMENTS.—The following appointments have recently been made:—

Royal Navy (13th April): Fleet-Surgeon O. Rees, M.D., M.B.Glasg. (1889), to *Wildfire*, additional for Sheerness Barracks and Yard.

Royal Army Medical Corps (15th April): Major-General Sir William Babtie, V.C., K.C.M.G., C.B., M.B.Glasg. (1880), to be Inspector of Medical Services and to be Temporary Lieutenant-General.

HONOURS FOR GLASGOW GRADUATES.—The Military Cross has been awarded to Captain James Dunlop Kidd, M.B., Ch.B.Glasg. (1906), R.A.M.C.

Among the honours bestowed in connection with military operations culminating in the capture of Jerusalem, the Distinguished Service Order has been awarded to Major (Temporary Lieutenant-Colonel) Matthew Dunning, M.B.Glasg. (1895), R.A.M.C.

The following are the statements of service for which decorations already recorded were recently conferred :—

Bar to D.S.O.: Temporary Captain Robert McCowan Hill, D.S.O. "For conspicuous gallantry and devotion to duty. While on the way to battalion headquarters his party was caught in an enemy barrage and four of them wounded. He at once dressed their wounds on the spot in a most exposed position and under heavy fire. On arriving at the aid-post he was informed that a whole machine-gun team were casualties in an advanced position. No stretcher-bearers were available, and he at once went forward and attended to them on the spot under heavy fire. He then returned and worked at his aid-post under intense shelling, often attending to cases in the trench outside when the aid-post was full. Casualties were being caused all round him, and he was wounded himself, but, though suffering severely, he remained at duty for 16 hours until the battalion was relieved. He set a most inspiring example of courage and devotion to duty to all ranks." Captain R. McCowan Hill graduated M.B. at Glasgow University in 1906.

Bar to Military Cross: Temporary Captain John Finlayson McGill Sloan, M.C. "For conspicuous gallantry and devotion to duty. He worked continuously for two days dressing over 150 cases in the open under heavy fire, three or four of the wounded being hit by snipers. He showed a fine example of coolness and sense of duty." Captain J. F. McG. Sloan graduated at Glasgow University in 1912.

The Military Cross: Temporary Captain William Logan Scott. "For conspicuous gallantry and devotion to duty. He worked untiringly, attending to the wounded in the open under heavy fire during an engagement, and showed splendid courage and resource." Captain W. L. Scott graduated at Glasgow University in 1911.

Temporary Captain James Jack, M.B., R.A.M.C. "He established forward collecting posts and dressed and removed the wounded with great coolness and disregard of danger during a period of four days and nights. Most of the time he was under heavy shell fire, and set a fine example of courage to his men." Captain James Jack graduated at Glasgow University in 1910.

Serbian Cross for a Local Nurse.—Intimation has been received by Nurse Agnes Mann, of the Middle Ward Hospital, High Blantyre, that she has been awarded by the Crown Prince of Serbia the Silver Medal for bravery in recognition of her services to the Serbian people. Nurse Mann served for two and a half years in Serbia with Lady Paget's Nursing Staff, and she already holds the Serbian Cross of Charity, which she received in June, 1916.

Casualties Among Glasgow Graduates.—Lieutenant-Colonel R. T. C. Robertson, D.S.O., M.B., R.A.M.C., whose name appears in the list of wounded, is the eldest son of Dr. R. T. C. Robertson, Union Street, Hamilton. He graduated at Glasgow University in 1904, and was in practice with his father when, at the outbreak of war, he went to France with the first Expeditionary Force. He has been several times mentioned in despatches.

Captain John A. Gilfillan, M.B., Ch.B.Glasg. (1914), who is posted as missing, resided at Drymen.

Medical Units in the Retreat.—The Secretary of the War Office announces that in the recent fighting and retirement on the Western front a certain number of medical units, such as casualty clearing stations, fell into the hands of the enemy. All the medical and nursing personnel of these units and the patients were safely evacuated, none falling into the hands of the enemy. The equipment and material was all replaced immediately, and large reserve supplies have, in addition, been sent to France. All deficiencies in personnel—officers, nurses, and other ranks—have been made good. The Canadian and Australian medical authorities have most generously come to our help by lending us medical officers and nurses. This assistance has been very greatly appreciated.

It is regretted that in the process of evacuating casualty clearing stations a certain number of casualties occurred amongst the medical and nursing personnel. This was inevitable, as the units had to be cleared out at short notice, under, in many cases, heavy fire. A surgical team which had very generously been lent to one of our casualty clearing stations by a Philadelphia hospital was heavily bombed, and two officers and one nurse were wounded.

The consulting surgeons of the Administrative Medical Staff in France report that the surgical results, especially taking into consideration the immense difficulties attending the evacuation, are extraordinarily good, and that the care and attention which the wounded are receiving leaves nothing to be desired. From every source we hear nothing but praise of the unselfish devotion and disregard for personal safety of all medical and nursing personnel. The work of the stretcher-bearers and motor ambulance drivers has been throughout exemplary.

SCOTTISH WOMEN'S HOSPITAL.—The National Union of Women's Suffrage Societies has now published a list of the sums already received in support of the Scottish Women's Hospitals for Home and Foreign Service, together with an appeal for further subscriptions. This list shows that the moneys already received reach the splendid total of £273,268, 8s. 5d. The Scottish Women's Hospitals provide and maintain a hospital in Macedonia, another in Corsica, and a third in France—these are intended chiefly for the benefit of Serbians. They also maintain in France at the Abbaye de Royaumont a hospital of 300 beds and another of the same size at Villars-Cotterets for the benefit of French soldiers, as well as a similar hospital with a large orthopædic section at Salonika. It is therefore not surprising to learn that £9,000 a month are required for the upkeep of all this work.

That the work of the Scottish Women's Hospital has been recognised in America is evidenced by the very generous donation recently received. On 27th March the American Red Cross handed to the British Red Cross a cheque for $50,000, being their first instalment of a donation of $100,000 to be transmitted by the British Red Cross to the Scottish Women's Hospital. This grant is made at the instance of Miss Kathleen Burke, and is given without any restrictions as an expression of the belief in and approval of the work of the Scottish Women's Hospital. The remaining $50,000 will be paid by the American Red Cross on 1st June.

Dr. Elsie Inglis Memorial.—Details of the memorial to the late Dr. Elsie Inglis were given on 5th April at the annual meeting of the Edinburgh Hospital and Dispensary for Women and Children and Hospice, which was founded by Dr. Inglis twenty years ago. Sir Alfred Ewing said the hospice would always be a memorial to Dr. Inglis, and her friends would wish to see it strengthened and enlarged so that it might be a worthy memorial to one who so well deserved to be remembered. Mrs. Johnstone said the committee had no desire to build an impressive maternity hospital, but only to house the hospice conveniently and adequately, and to develop there every means which would tend to solve the problem of the mother and her baby and their health and safety in the conditions of modern life. Twenty beds would meet the purpose. Room was to be provided for women medical students to live in. An income of £2,000 a year was essential.

The last contingent of the Elsie Inglis Unit of the Scottish Women's Hospital, which is destined for the Macedonian front, was given a farewell meeting at Waterloo Place on 13th April. The unit, which consists of twenty-five cars, each weighing two tons, was to have gone away in one section, but, owing to wartime difficulties, the last ten cars have only just been completed. The detachment was under the command of Miss F. Parker. Among those who saw the cars were Prince George of Serbia, and members of the Serbian Legation in London.

Hospital Ships for the Tigris.—What skilled Indian labour is capable of has been illustrated by the launching recently from the yard of Messrs. Burn & Co., on the River Hooghly, of two motor hospital ships for Mesopotamia. These are as up-to-date vessels as any home yard could have produced. They were built by Messrs. Burn & Co. for the Indian Government from designs by Sir John Biles, and the construction has been carried out by Bengali skilled workmen, under the supervision of Mr. A. Cochrane, M.I.N.A., a director of Messrs. Burn & Co., and a Clyde-trained shipbuilder. The medical arrangements have been designed and worked out by Lieutenant-Colonel Carter, I.M.S. Navigation amidst the strong currents, sharp curves, and shallows of the Tigris River is exceptionally difficult, and in order to increase the steering efficiency of this light draught type of ship—they draw only some 3½ feet—they are equipped with four propellers underneath the nearly flat bottoms. The screws revolve in tunnels, so as to prevent them striking the bed of the channel. There are four rudders, the tillers of which are coupled up to steam steering gear on the main deck. On the main deck there is refrigerating plant for producing ice and machinery for distilling water. The arrangements are intended to ensure an ample supply of fresh water, including hot water for the operating theatre, dispensary, &c. A mechanical system of ventilation delivers continuously a supply of cooled fresh air in the summer with its 120 degrees in the shade.

For the Mesopotamian winter with its extreme cold a similar supply of heated air can be provided. Electric fans are fitted in each cabin and through the hospital wards. The hospital accommodation for convalescents is on the flying deck, while for more serious cases there are wards on the upper and main decks, including a separate private ward for British officers. At the aft end of each ward large gangway doors allow access for stretcher cases, and at the fore end of the main deck ward there is a cot lift, by means of which patients can be taken to the upper and flying decks. At the fore end of the upper ward there is the operating theatre with its floor of white tiles and its walls of white enamel. A well-equipped dispensary adjoins the theatre. On the after part of the flying deck there is an isolation ward with bathrooms and lavatory, and adjacent a disinfecting-room with steam disinfector apparatus for treating clothing.

All that modern science and skill can do to alleviate the lot of men suffering from wounds or from the diseases prevalent in Mesopotamia has been applied to the construction and equipment of these floating hospitals. The Red Cross is conspicuous on the ships' sides, and, in addition, there is an ingenious illuminative arrangement above the ship which at night shows out brilliantly in the form of a cross, visible 10 miles off, on either side of each vessel, so that the enemy cannot possibly plead ignorance of its marking as a hospital ship. The medical aspect of the Mesopotamian front had a somewhat unfortunate reputation at an early period of the war, and the many people who have friends in that region will be interested in this abridged account of two sister ships now in Mesopotamia. It is culled from a long description in *The Englishman* of Calcutta, which described very fully the launching of the vessels.

THE ADMIRALTY AND LARBERT ASYLUM.—It was reported at the monthly meeting of Row Parish Council at Helensburgh on Tuesday, 2nd April, that the Admiralty intended taking over Larbert Asylum, and that arrangements had been made for the housing of the patients in other asylums.

GENEROUS GIFT OF LAND TO ERSKINE HOSPITAL.—An important addition has been made to the lands surrounding the the Princess Louise Scottish Hospital for Limbless Sailors and Soldiers at Erskine. When the proposal to establish the hospital was initiated in 1916, Mr. Thomson Aikman, the owner of Erskine estate, placed the mansion-house and policies at the disposal of the promoters of the scheme for the period of the war and twelve months thereafter. Subsequently Mr. John Reid, who is vice-president of the hospital, purchased the buildings and 360 acres of ground, and presented them to the committee. Since then Mr. Reid has been closely associated with the development of the hospital, and by a further gift has shown his deep interest in its welfare. At a meeting of the Executive Committee on 26th March the Lord Provost (Mr. J. W. Stewart) submitted a letter received from Mr. William Guy, joint hon. secretary, with reference to negotiations which have been carried through with Mr. Aikman regarding a wood of 50 acres and an area of 45 acres of agricultural land adjoining the hospital on the west. It was explained that Mr. Aikman had consented that if any benefactor of the hospital or the hospital itself wished to acquire the wood and the land at the market value to preserve the amenity of the institution, he would be prepared to reduce the price by £1500, this sum to be treated as a contribution from himself. Taking advantage of this offer, Mr. Reid has arranged for the purchase of the wood and the land, and has announced his intention of conveying them to the trustees of the hospital. With the addition of these acres the hospital grounds will now extend to about 500 acres.

As the *Glasgow Herald* suggests, we may look forward to the hospital at Erskine becoming a permanent institution on the lines of the well known establishment at Chelsea.

CALL FOR DOCTORS FOR THE ARMY.—At a meeting of a special sub-committee of the Insurance Committee for the burgh of Glasgow the Clerk reported that an urgent call had been received through the Local War Emergency Committee for further doctors to take service with the military forces. The sub-committee, having regard to the number of doctors on the medical list of the Insurance Committee already on service with the Forces, recommended that out of 38 names of doctors liable for military service, who are meantime attending to their practices, no objection should be raised to the taking for service of 22, but that in the event of any of the 16 others being called for service the committee, in view of the difficulties in making satisfactory arrangements for the continuance of their practices, should make representations to the Scottish War Emergency Committee against their being taken.

PAISLEY MEDICAL SERVICE.—In order to meet the requirements of the military for more medical men the advisability of creating a central consulting bureau is under the consideration of the Paisley panel doctors. Under the proposed scheme two doctors would be in attendance each evening, and all consultations of insured persons on the panels would take place in the society's premises, while a clerkess or a nurse could be on duty night and day to take orders for visits. The County Insurance Committee has also the matter under consideration.

CHARACTERISTICS AND HEREDITY.—Dr. W. E. Agar, lecturer on Zoology at Glasgow University, delivered in the Queen's Rooms, Glasgow, the fifth of the series of lectures arranged by the Glasgow and West of Scotland Branch of the National Council for Combating Venereal Diseases, on Friday evening, 15th March. The Rev. Professor Milligan presided over a large audience, many members of which could only obtain standing room. Dr. Agar, whose subject was "Heredity," said that parents and offspring resembled each other, not because the parents transmitted their characteristics to their offspring, but because both had been produced from the same stream of germ plasm (the substance of which the germ cells are composed). This explained the fact, which had been established by experiment and observation, that characteristics acquired by the body of the parent as the result of the environment to which it had been subjected were not ordinarily inherited. Our power of predicting the characteristics of the offspring from those of the parents depended on, firstly, how far we could judge of the nature of the germ plasm from the characteristics of the parents; and secondly, how two different germ plasms would behave in syngamy. The most important advance ever made in knowledge of both these points was the discovery of Mendel, known as Mendel's law. It was pointed out that Mendel's law was explicable on the assumption that the hereditary material was composed of relatively independent units, some of which exercised a predominant influence on some of the bodily characters, and others on others. Owing to the ordinary processes of syngamy these units existed in the body in a duplex condition, but in the germ cells they remained side by side and separate when the gametes were formed, so that each gamete contained only one of each kind of unit. The lecture was illustrated by lantern slides.

THE SMALL-POX OUTBREAK IN LONDON.—Strict vigilance is being exercised by the public health authorities to check the outbreak of small-pox in the East End of London. By a policy of severe isolation of persons who have been in contact with the infection it is hoped that the spread of the disease is being checked. It is suspected that the congregation of people in air raid shelters under crowded conditions, which became in some instances notoriously insanitary, had something to do with the initial extent of the outbreak. Once the existence of the disease was diagnosed the authorities acted with relentless vigour. The public quickly recognised also that it had a duty to protect itself, and many people have wisely sought the immunity which vaccination and revaccination brings. Since the Legislature permitted abstention from vaccination on grounds of conscientious objection a growing percentage of infants have started life without this protection against small-pox.

THE TREATMENT OF CANCER.—At the annual meeting of the Glasgow Royal Cancer Hospital, held on 25th March, Sir George T. Beatson, in his report on the indoor department, said that many of the cases had the benefit of radium emanations, thanks to a very liberal supply of emanations placed at the hospital's disposal by the West of Scotland Radium Committee. It was more and more clear that the kind of case in which the therapeutic value of radium showed itself presented a special type of disease, and that the number of such cases was small. The Chairman, in moving approval of the report, said that research work, which had always been a prominent feature of the hospital, had been suspended owing to the fact that the members of the staff who had carried it on were now on war service. It was hoped, however, in view of the immense advance in other branches of medical science, that they would gain in their present work knowledge and experience that would be useful to them when they returned to the hospital. Sir George T. Beatson, who seconded, said they were indebted to Professor Teacher, of the Royal Infirmary, for coming forward in the present circumstances and assisting the hospital by taking up a certain amount of the pathological work. The report was adopted.

MOSQUITOES AND MALARIA.—So many men are just now returning to this country from the East suffering from malaria that fears are entertained by the authorities that the disease may spread unless suitable precautions are taken. The chief means of disseminating malaria, as is well known, is the bite of the anopheline mosquito, and under these circumstances welcome will be given to the action of the Local Government Board in asking for assistance from various local bodies, and especially individual naturalists and field entomologists, in providing information as to the prevalence and distribution of mosquitoes or gnats throughout Great Britain. Persons engaged in the study of natural history are requested to keep notes and records of any adult insects which they may meet with during their researches. Discoverers are asked to note the date and hour of collection, and also the place where the gnats are found, particular attention being paid to the fact whether it is a building, in which case the nature and purpose of such building is to be specified. Further important details are the condition of the weather and the temperature. The larvae are much more difficult to detect than the adults, which can be identified generally by the spots on their wings; but instructions are also issued for dealing with them. The most helpful notes that are expected concern the character of the water where the larvae are discovered, whether natural or artificial, and also whether the breeding place is situated in shady pools or in open collections of water, with information as to the presence or absence of weeds, fish, and other such features.

The Proposed Ministry of Health.—At the conclusion of the formal business before the annual meeting of the British Hospitals Association, held at St. Thomas's Hospital, London, on 15th March, the subject of the proposed Ministry of Health and how it may affect voluntary hospitals was discussed.

Lord Knutsford said he thought it might be helpful if he were to tell the meeting what was the proposal which the Government had practically undertaken to incorporate into a Bill to provide for a Ministry of Health. A Local Government Committee had made a report to the Minister of Reconstruction, and the lines were suggested on which the Bill should be drawn. The scheme included a provision for all Boards of Guardians to be abolished, and all the rate-paid work which those bodies did, their work for the sick poor (including lunatics), to be handed over to the County Councils or Borough Councils. The voluntary hospitals were not referred to: they were left as at present. The voluntary hospitals would be asked to enter into contractual arrangements with the Public Health Authority. Where the Borough or County Council could not provide out of the rates what a patient wanted, they would enter into contracts with voluntary hospitals to supply them, a practice at present carried out in regard to cases of ringworm, adenoids, aural disease and eye troubles. However proud any of those present might be of the voluntary hospitals, they could not contend that they were really meeting the needs of the nation, but people were treated in them when they got serious illnesses. They were not following up that treatment into the patients' homes: there was not the needed continuity of treatment. And the cost of what the hospitals did fell on the few, not on the many; moreover, the revenue of hospitals was always too fitful. Neither would the hospitals meet the needs of the nation in the future, but they would be able to supply what the ratepayers never would supply. The real need for voluntary hospitals would thus be clearly seen: they had invention, they had initiation, ability, and willingness to lavish money on a new invention which gave promise of benefit. If, for instance, someone were to discover a new lamp for the treatment of lupus, it would at once be adopted by a voluntary hospital and tried. But one would not be able to get people elected by the ratepayers to try anything new: they would feel themselves bound by statute, and by the demand that no experimentation should be carried out with ratepayers' money. Even if voluntary hospitals were to be taken over by the State, someone would soon start a special hospital for something or other, and it would be followed by others. As a matter of fact, there would never be an end of voluntary effort. He felt sure there would be no attempt, in the new Bill, to interfere with voluntary hospitals. He hoped, therefore, there would be no pig-headed opposition to a Bill which was going to try adequately to treat the health of the whole nation: let this Association give the Government in this matter all the loyal assistance it could, by its skill, its knowledge, and its inventions. If, in return for hospitals entering into contracts with County Councils, a certain amount of representation was asked for, do not let them be frightened and regard it as State control. Had any of his hearers found that interference meant control? He had never done so: he was only too thankful when people would interfere if they thought they could do the work better than one could do it one's self—and that was quite easy. Therefore he urged the representatives of voluntary hospitals to welcome this Bill, and to do all they could to help it forward.

Major McAdam Eccles, M.S., thought all those present would join Lord Knutsford in welcoming a Ministry of Health: he believed the whole medical profession would do so, always provided that profession had a real say in the matter of its institution and its government. Voluntary hospitals not only should, but must, continue as such. The reason for that feeling was that they were British and had a sentiment within them which had probably been handed down from generation to generation—that there was such a thing as charity in its truest and best sense. He had seen State hospitals and their work in Germany, and all he would say was that he sincerely trusted that when we had achieved the victory we should not copy the German principle of State hospitals, for that principle excluded that one human touch which was the very backbone of the voluntary hospital system. A question which was increasing with each day was that of, not State aid, but State payment for services rendered. If patients were taken under the wing of the State, it was the duty of the State not only to see that they were adequately treated, but that some payment should be made for the treatment. There was plenty of evidence that the work done by voluntary hospitals had official recognition, and members of the Association should settle exactly what position they intended to hold in this matter: they should be definitely ready against the time that the proposed Bill came forward. Hence he regarded the proposal to appoint a Committee to watch the Bill as a most important one. The voluntary hospitals should be willing to receive money from any body, local or central, but there should be a proviso as to the proportion such contribution bore to the total expense of the institution. The wounded men had been taken completely under the aegis of the Ministry of Pensions, and they were not to be made objects of charity. Certainly those men deserved of the very best that could be done for them. But in that case it was right that all such services other than medical treatment should be adequately provided for. Lord Knutsford had well said the services rendered in hospitals by medical men could not be adequately paid for, but there should be adequate payment for hospital outgoings and administration. There was a prospect that in the future the sick poor would not be so poor as in former days, and it would be necessary that the hospitals should be brought up to a state of even greater efficiency than at present, and that again would mean more money. If a demand were to be made in the future for a special equipment, either the people should pay for it, or there should be facilities for the granting of a loan at a reasonable rate of interest.

The Hon. Sir Arthur Stanley formally moved the following resolution: "That the Council be requested to appoint a Special Committee for the purpose of considering the provisions of the proposed Bill for the establishment of a Ministry of Health, and, when necessary, to convene a meeting of members to discuss it."

Lord Knutsford seconded, and it was carried unanimously.

THE "INTELLECTUALS" AND THE WAR.—Under this title an article has recently appeared in the columns of the *The Glasgow Herald*, and signed with the initials B.E.F. This article discusses the post-war prospects of those men who were engaged in some form of intellectual work before they were called to serve as soldiers.

In the first part of the article the writer gives reasons for coming to the conclusion that military service tends to intellectual atrophy, and states his belief that many of those men will be quite unable after the war to carry on the work in which they were formerly engaged. He further states that in the army "the first lesson the 'intellectual' has to learn is that of complete subservience of the mental faculties; not, indeed, to cease to reason but to reason along stereotyped lines until the reasoning becomes in the worst sense mechanical, the which is intellectual death." As this is a matter of vital importance, not only to the men affected but also to the country, it may be well to reproduce the argument.

"The 'intellectual' having surrendered himself to become a cog in the great mechanism of war—and the surrender often comes at the end of a desperate struggle, in which few gain the victory even of a compromise—the fatal results follow quickly. The day is filled with mechanical work. In the line there is the added element of danger, but action is still mechanical. The mind atrophies. Intellectual interests lose their grip. Physical exhaustion plays its part until the victory of matter over mind is complete. The desire for sensuous pleasure, for what youth in its wisdom calls 'life,' is overpowering. Mental work is too difficult to satisfy the immediate desire to escape from oneself. The surroundings render such work impossible, and finally the last refuge, reading, even that which requires a minimum of concentration, becomes a task, and the great majority of men, whose acquaintance with thought from Plato to Croce was not a passing one, end by finding the task of assimilating the tawdry sentimentalism of our all-story magazines or more expensive, but as tawdry, fiction sufficiently arduous to cause them to abandon reading altogether. That there are exceptions is undoubted. The tale of the sergeant ex-U.F. probationer who wrote a commentary on the Book of Job in the lines at Armentieres is not necessarily apocryphal. But from at least 90 per cent. of men one hears only despairing sighs. 'Mentally dead' is their verdict on themselves. They speak of impaired faculties, of loss of concentrating power, failure of memory, inability to think, abhorrence of books. To the younger man the situation does not appear so grave. His life work was barely begun, the pressing worry of livelihood does not concern him, and he talks glibly of emigration. He rarely talks of returning to his studies. But to the others, to whom the call of the war has lost much of its potency, matters appear desperate. They are in every way less fit to carry on their work than when they started. Put intellectually, that means the present intellectual generation is threatened with extinction; put economically, that the wage-earning capacity of a whole class has dropped to zero.

"Let me quote two cases which have come under my own eyes. Captain P—— had been a history student at an English University whose means enabled him to devote himself to scholarship. He was in the best sense of the word a teacher, adding daily to the sum of historical knowledge and communicating it to others. He had already done important research work, and was on the eve of greater things. He joined the Army as an officer early in 1915. While at home he was able to maintain his studies, though he confesses to the difficulty of bending his mind to them. He went to France shortly after Loos, taking with him books on his work and having accepted a fresh commission for historical writing. For six months, owing to the necessities of the situation and the impossibility of ever being alone, he did not open them. When he did he found he had forgotten so much that reading was a toil, he could rarely settle to read, and could not remember what he did read. Despairing of success, he gave up his proposed work. In the autumn of 1916 convalescence placed him again in his study, where he found masses of notes had become completely unintelligible. Returning to France he survived the Arras battles, and later received a 'soft job.' Here he had time to read and solitude, and since then has not opened a book. His last words to me were on going to fruit farming in California. Lieutenant Q—— was called up on leaving school. His school career had been exceptionally brilliant, and he had chosen medicine as a profession. He has been in France for 11 months. At first the change from school life fascinated him until it palled. He found he had forgotten all he learned at school, and a despairing effort to read a serious book failed. He has definitely decided that a University career is impossible on the double ground that he will be unable to settle down to it and that the effort to recover lost ground will be too hard to be successful. In both these cases the loss of former mental equipment is joined to deterioration of mental power. And they—and thousands like them—must one day return.

"Such is the problem. These men are vitally necessary to the nation. One does not put forward too extreme a claim in asserting that the University tutor is as indispensable to national life as the producer of goods. Many have already decided that a return is impossible; many more, while denying the impossibility, admit the improbability; few while maintaining the probability recognise fearfully the magnitude of the effort required. It is futile to attempt to prophesy. But when one speaks of the unlikelihood of a youth who has been used to the excitement, the hardship, the danger, the fine sociability, and the physical appeal of life in a fighting division ever returning to the tyranny of a desk, be it office or study, one is too often put off with the comforting answer, 'Oh, they will be glad to come back.' Undoubtedly, terribly, tragically glad. But will they be able?"

In the second part of the article the writer declares that the whole Army system is hostile to intellectual life, and frowns upon any attempt to exercise the reasoning powers except within very narrow limits. He then indicates methods by which the habit of thinking may be maintained even although the mental acquirements may not be increased, and, finally, puts in a very strong plea for the demobilisation at the earliest possible moment of all men of the " intellectual " class.

" Much will depend on the methods adopted in demobilisation. At present the scheme in favour rests on the immediate release of men engaged in 'necessary' work, passing by slow degrees through various other categories until last of all the 'professional class' receive their discharge. This implies a great injustice to the 'intellectual.' To the man engaged in manual or mechanical work, even if it be highly skilled, there is little to overcome in recommencing. Practice will rapidly bring him to his former efficiency, and an additional six months after peace will be, from the viewpoint of his work, resting. But the 'intellectual' is faced with a double difficulty. Not only has he to re-train his thinking powers now deteriorated and recover his former mental resources, but he has an immense leeway to make up. The entire intellectual output from 1914 to the date of his discharge has to be mastered for his particular work. The minister indeed returns with a new store of experience, but he finds an outlook and society which are foreign to him; he has lost the student habit; he has missed all the work done since he left. Six months hard and discouraging work must be faced ere he can overcome these difficulties, work, too, which has become uncongenial, and which the whole trend of his recent experience urges him to abandon. The student on his return has forgotten all his previous knowledge. He has literally to begin over again and to compete with men in the trained state in which he left. All this points to the advisability of the instant release of the 'intellectual.' For him the six months after peace will be a period of crisis. Should he be forced to spend them in the complete monotony and inaction of a demobilisable body the process of intellectual suicide stands an excellent chance of being completed. With the workman the case is the reverse. The extra six months, however he may chafe at them, will not further impair his national usefulness. Whatever mischief has been done in his case is not only done, but done with, and his wage-earning capacity is unimpaired. That period which apparently lets his intellectually wage-earning brother get so much start of him actually merely enables that person to begin work simultaneously with him.

" Demobilisation will be profoundly affected by financial considerations. The question of the married soldier and his additional cost to the revenue must be taken into account, and there is possibly agreement that men engaged on 'necessary work' should go first. Without entering into the old controversy as to the meaning of 'necessary,' it is surely possible to plead that necessity should be measured not only on standards of domestic comfort. If our food and our coal must come first, it is surely possible at least to begin the demobilisation of the 'intellectual' simultaneously with that of the miner and the farmer, and not relegate him in the company of the bookmaker to a far-distant 'Group 40.' We have a right to demand that more than the economic question shall be considered. It will also need to be considered after the demobilisation. It has been suggested that steps ought to be taken to enable the 'intellectual' to occupy fresh fields, and an agency set up to enable him to emigrate, not with a view to abandoning his work, but to carry it on. The idea is excellent, it being obvious that transference to a Canadian University might act as the needed spur to the jaded lecturer who would never attempt to win intellectual redemption within the precincts of his Alma Mater. But a more excellent idea and a sharper spur would be the drastic increase of wage to the worse-paid class of 'intellectual' to let him feel that the reward of victory is material, as well as mental, prosperity.

"Otherwise assistance is barely possible, and the future was never less easy to forecast. We may have a sufficiency of Bolshevism in Europe to threaten the very existence of the 'intellectual,' but whatever happens he will have to fight his own battle, and, as in all things that pertain to the spirit, fight it alone."

While we may earnestly hope that the writer has taken too gloomy a view of the prospects of the intellectuals at present in the army, and while we trust that their intellectual powers will return after the delirium of war, it will, we believe, be generally agreed that every possible encouragement and help should be given them to return to their former avocations.

RED CROSS SOCIETY: SCOTTISH BRANCH.—The Scottish Branch of the Red Cross Society have now issued an abstract of their income and expenditure account from 4th August, 1914, to 31st December, 1917. From this account some interesting figures may be noted. The donations received, apart from certain sundries, amount to the magnificent sum of £978,940, 14s. 11d., and the capitation grants received for maintenance of wounded in their first line hospitals are £122,218, 16s. The value of ambulance cars, clothing, and gifts in kind received is not included in this account of income. On the side of expenditure the sum for clothing and medical and surgical supplies is £67,639, 18s., and money grants for various objects total £84,031, 13s. 10d. The motor ambulances and launches cost £183,561, 1s. 5d., and the necessary renewals—tyres, petrol, &c.—cost £74,523, 2s. 2d. The building and equipment of the Scottish National Red Cross Hospital at Bellahouston cost £89,758, 6s. 8d., while provisions, maintenance, wages, &c., raised the total to £204,596, 5s. 11d. The expenses for Springburn and Woodside Red Cross Hospital, including alterations to buildings, are noted at £99,755, 16s. 7d.

In addition to these the Society has maintained a Scottish Section of No. 11 Stationary Hospital at Rouen and a Scottish Hospital in Paris.

The claims of the Scottish Branch of the Red Cross Society have met with a remarkably generous response from the Scottish people, both at home and abroad. The response is felt to be all the more gratifying when one remembers the many calls that have been made on the purse of a generous public since the outbreak of the war. The abstract of accounts merely indicates the activities of the Society. Estimations of the number of sick or wounded carried in ambulances or launches, or treated in hospital may help to give one some faint idea of the amount of work done, but it is beyond imagination to conceive the value of that work. It is therefore with great pleasure we observe that the stream of gifts in cash and in kind still flows steadily to the Red Cross Society, and no one in these days needs to be told that such gifts are urgently required.

On 2nd April a motor ambulance was presented to the Scottish Branch of the British Red Cross Society by the members of the Rotary Club of Glasgow.

Sir George T. Beatson, K.C.B., K.B.E., in accepting the gift on behalf of the Red Cross Society, said the car would be exceedingly useful at the present time. It was a gift that had been well earned by the men to whose service it would be devoted. We had passed, he said, through a week of considerable anxiety—a week that had deepened our admiration for our soldiers and increased, if that were possible, our sense of gratitude to them. Mr. R. J. Smith, convener of the Red Cross Transport Committee, stated that they were working at very high pressure. From messages received from their convoys in France they knew that the ambulances over there were in constant use, night and day. Within the past eight days they had had to supplement, in response to telegraphic appeals, the fleet of vehicles they had on service in France. About a dozen cars had been despatched from Glasgow. These withdrawals reduced the fleet of cars at home at a time when the demand for them was exceptionally heavy. Since the beginning of the German offensive twelve ambulance trains had come into Glasgow, four within the past forty-eight hours. The Scottish Branch since the beginning of the war had given 569 motor ambulances, 446 of these being provided by gifts of money and 123 as gifts in kind. The ambulance car presented by the club is a six-cylinder "Silent Knight" Daimler, with a body built in Glasgow.

A motor ambulance waggon subscribed for by members of the Glasgow Voluntary Aid Detachment, No. 17, was presented to the Scottish Branch at Blythswood Square on 10th April. The waggon, which is named Cargill, was formally handed over on behalf of the detachment by Mrs. J. T. Cargill.

Mr. R. J. Smith, chairman of the Transport Committee, in accepting the car on behalf of the society, said it was the first of three motor ambulances which had been subscribed for by the detachment. The gift was a notable one, as it was added to the personal services of the detachment. The vehicles were given by men who were engaged in the work and who thoroughly appreciated their value to the society. Up to the present the Scottish branch had sent 569 motor ambulances for service at home and abroad. The Glasgow Voluntary Aid Detachment had assisted in removing the sick and wounded from 614 ambulance trains which had arrived in Glasgow since the war began.

The Scottish Branch has also received a further contribution of £1,000 from *The Glasgow Herald* Red Cross Shilling Fund. In acknowledging receipt of this sum Messrs. Kerr, Andersons, and MacLeod, honorary treasurers, state on behalf of the council of the society that they appreciate very highly the continued the work of the Scottish Branch, and they express the thanks of the council for the generous help which has been extended to them since the outbreak of the war. A heavy demand, it is stated, has been made on the resources of the organisation owing to the increased cost of maintaining the ambulances, hospitals, clothing, and comforts depôts and other branches of the work.

At the annual general meeting of the Renfrewshire Branch of the Red Cross Society Captain Colledge reported on the satisfactory position of the Voluntary Aid Detachments and on the good work done by the members in military and auxiliary hospitals, transport work, and in other directions. During the year 39,701 worked articles were contributed for wounded soldiers and hospitals, making a total since mobilisation of 197,438. These figures were exclusive of foodstuffs, &c. Members of the branch and others had been most active in collecting money for Red Cross objects, the most notable success being Red Cross Week, 1917, for which the county raised £16,649, 5s., being the third highest sum raised in Scotland.

Mr. G. W. Moody-Stuart, the hon. treasurer, submitted the financial report, which showed that the county had forwarded the sum of £20,842, 8s. 9d. to the hon. treasurers of the Scottish Branch for Red Cross purposes during the past year.

The Chairman moved and the Lady Alice Shaw Stewart seconded the adoption of the reports, which were considered very satisfactory and adopted.

The meeting then considered the Red Cross Week, 1918, scheme for the purpose of raising £250,000 in Scotland for Red Cross purposes, and it was unanimously agreed to proceed with the scheme in the county, and the hope was expressed that the county's splendid result in 1917 would be emulated.

The Scottish Branch have issued a booklet giving a synopsis of the reports of their Transport Committee from the commencement of the war till 31st December, 1917. It is an interesting record, emphasising the great value of the work which the branch has done and is doing. Dealing with transport at Scottish centres, the reports show the largely increased demands made upon the organisation during the year. In a reference to staff arrangements it is mentioned that there was a considerable addition to the number of voluntary lady drivers, and that there interest of the publishers and readers of *The Glasgow Herald* in are now on the headquarters staff alone 16 ladies engaged in driving cars. The reinforcements sent to France during 1917 included 10 motor ambulances and a repair waggon, which now form Convoi de l'Ecosse No. 2, on service in the French lines; 37 ambulance vehicles and a transport lorry sent in co-operation with the Ambulance Department at Pall Mall; an x-ray car for Convoi de l'Ecosse No. 1, and a dental car for service in the British lines. A report is quoted from the Director-General of Medical Services in France on the work of No. 8 Scottish Motor Ambulance Convoy, in the course of which it is stated that during three years' service the convoy has taken part in the operations at Neuve Chapelle, the second battle of Ypres, Festubert, Loos, Vimy Ridge, the capture of Hill 70, and also, a section of the convoy, at Cambrai. With reference to British ambulances in Russia it is stated that reports have not been coming to hand. There has been a prohibition, it is added, for many months upon the despatch of written or printed matter from that country. The ambulances were mainly in use behind the firing line, and one report states that they were seen in the neighbourhood of Luck. The Anglo-Russian Hospital has been closed, and Lady Muriel Paget and the *personnel* of the Motor Unit are endeavouring to return to England.

GLASGOW UNIVERSITY COUNCIL: ELECTION OF ASSESSOR TO THE COURT.—At the statutory Meeting of Glasgow University Council, held on 24th April, the post of assessor to the University Court, vacant by the death of the late Sir David M'Vail, was filled by the election of Dr. George S. Middleton. His success will bring much pleasure to his medical brethren in Glasgow and the West of Scotland, among whom his qualifications for such an office are widely known and appreciated. His services to medicine and his claims to academic distinction have already been recognised by the University, when, in 1915, it conferred upon him the honorary degree of LL.D. On that occasion the Dean of the Faculty of Laws, in presenting him for the degree, said that these services "had been such as to entitle him to be ranked with those to whom the whole community owes a debt of gratitude." None who knows him can doubt that in his present office he will yet further extend his claim to grateful recollection.

REVIEWS.

Directions for a Practical Course in Chemical Physiology. By W. Cramer, D.Sc., M.R.C.S. London: Longmans, Green & Co. 1917. (3s. net; interleaved, 4s.)

There is a vast amount of information in this little book, and as the practical aspect of this subject is of ever-increasing importance the book itself can be heartily recommended. There is nothing like actual practical work for impressing fundamental facts upon the student, and in the past this was just where the student was apt to break down although his theoretical knowledge might be quite considerable.

In future editions it might be an improvement if the results of the various experiments were fully explained instead of leaving the student to do this for himself: he may draw quite erroneous conclusions unless under the direct supervision of a teacher.

In all practical experimental work it is essential that the most minute details should be given, and nothing left to individual idiosyncrasy. In this respect Dr. Cramer's book is not above criticism. For example, in experiment 24 the student is not informed what strength of alcoholic solution of potash is required, and further on in the same paragraph he is instructed to continue, if necessary, the heating with more alcoholic *soda*. Again, in experiment 33 (b) the words "dilute acetic acid" are too indefinite; anything between 2 per cent and 20 per cent might be considered dilute.

The experiments on blood are fully and carefully described, and in this connection the identification of the proteins of the blood serum is given proper prominence. The differentiation between serum albumin and serum globulin is one of very considerable importance, as the presence or absence of this globulin is a very important factor in syphilis of the central nervous system.

The section on urine is admirable, and the student will find that by following out the various experiments prescribed he will have a much more rational idea of the various tests which in the usual way are simply rule of thumb methods. In this section also the methods for estimation of the reducing sugars in urine are fully given, and their possible fallacies considered. No mention is made, however, of the use of strong solutions of potassium sulphocyanide in preventing the precipitation of the sub-oxide of copper and so ensuring a much more delicate "end reaction."

Altogether the only real deficiency in Dr. Cramer's book is simply that its compass is too small for the treatment in detail of all its contents, and with judicious amplification its value should be enhanced in later editions.

Venereal Diseases and their Prevention. By A. WINKELRIED WILLIAMS, M.B., D.P.H. London: H. K. Lewis & Co., Limited. 1917. (6d. net.)

THIS little booklet contains the substance of a lecture delivered by its author to soldiers in training. It gives in simple language a clear idea of the consequences of venereal infection to him who contracts it and to those whom he may infect in turn; it advocates continence, and points out the kind of life disposing to it; and it indicates the preventive measures to be adopted in the event of a failure of chastity, while duly emphasising the fact that they are none of them infallible. It is a thoroughly useful work to put into the hands of a young soldier.

Malingering or the Simulation of Disease. By A. BASSETT JONES, M.B., and LLEWELLYN J. LLEWELLYN, M.B. With a Chapter on Malingering in relation to the Eye, by W. M. BEAUMONT. London: William Heinemann. 1917. (25s. net.)

THIS monumental volume, which its authors dedicate to the Prime Minister, ostensibly as a compatriot, but possibly also with a hinted suspicion that the consequences of his legislation have increased the necessity for a study of their subject, deals with malingering on a scale "unattempted yet in prose or rhyme." It is in truth a monograph in which no aspect of the plague is left undiscussed. It begins with a historical sketch of the subject, considers the alleged increase in its prevalence of recent years, passes to its psychology, defines the affection and classifies its forms, describes the means of diagnosis, and concludes this introductory section by a chapter given to the attitude to be adopted by the medical man in forming his decision and to his behaviour in court. It then proceeds at much length to a discussion of malingering in relation to the nervous system, opening with a study of hysteria and the means of discrimination between the two conditions, and going on to deal with it in relation to the sensory system (pain, anæsthesia, pain in the back, pain in the leg, have each a long chapter to themselves), to the motor system (under which reflexes, tremor, contracture, and paralysis are considered), to complete nerve syndromes, such as epilepsy and the neuroses, and to insanity. A chapter on the false imputation of nervous diseases to injury or accident follows, and then three chapters upon malingering in relation to the special sense organs. Next comes the consideration of the simulation of internal disorders, the heart, the respiratory system, the digestive and the genito-urinary systems being successively discussed. The following section deals with malingering in relation to injuries and external diseases, among which, curiously enough, the infections are placed: and the book ends with a discussion of measures which might be adopted for its prevention.

The book is exhaustive: its possessor holds in its hand not only an encyclopædia of all the means which may be used for the detection of attempts at fraud, but a reasoned statement of the diagnostic considerations in almost every conceivable instance, and a wealth of illustrative cases which throw light upon the subject, both from the medical and the legal side. Its authors approach the problem of detection from no biased point of view; they have done a substantial service in showing how frequently malingering may be suspected when hysteria exists: and they are careful at every step to point out the responsibility of the physician in bringing an accusation of malingering, and the numerous instances in which apparent malingering has proved to be due to latent disease or disease with none but subjective symptoms. The pitfalls which beset the examiner are, in fact, so numerous that only the rarest of experts in all branches of medicine could avoid occasional mistakes; and Messrs. Jones and Llewellyn do well in insisting on the advantages of suspended judgment, and of a leaning, if one must lean in any direction, to mercy's side. Their book should be in the hands of all who have to deal with compensation cases, whether in military or in civil practice.

An Index of Differential Diagnosis of Main Symptoms by Various Writers. Edited by HERBERT FRENCH, M.D., F.R.C.P. Second Edition. Bristol: John Wright & Son, Limited. 1917. (42s. net.)

THE principle on which this book is based—fix your attention on the main symptom of a disease, and work from that to the diagnosis—was somewhat adversely criticised in our review of its first edition, as involving in many cases a needless expenditure of time and pre-supposing in the user of the book a complete inability to make even an approximate classification for himself. If the main symptom is pustulation, then you must read the whole article on pustules before deciding whether you are dealing, say, with impetigo or small-pox, and you must look up the other symptoms of each of these diseases under a number of cross references in the extremely elaborate index. The average man, viewing the case as a whole, would decide for himself without this waste of energy that it fell into one or other of the classes of disease of which pustulation is a symptom, and would limit his further search to the class in question. And it is undoubtedly the mark of a better-trained mind to have formed the habit of regarding the whole circumstances of a case than it is to attempt short cuts to diagnosis, to go about "looking for a sign." These objections apply to the present edition as much as to the first, but they must not be understood as intended to cavil at the individual articles. These are thoroughly well done, and in many instances exhaustive; each of them has been revised, and several new ones have been added. The illustrations add very much to the value of the book; they are nearly doubled in number, and represent almost every condition in medicine which is capable of pictorial representation; and both the coloured plates and the photographic illustrations have been admirably reproduced. The work in fact constitutes an excellent clinical atlas, and as such it can be profitably used whether or not one objects to the principle on which it is constructed. A new edition means, it would seem inevitably, an increase in size, and this one is so large as to be a somewhat unhandy volume, but the defect is of the less consequence as it will be mainly used as a work of reference.

Traumatic Pneumonia and Traumatic Tuberculosis. By F. Parkes Weber, M.A., M.D., F.R.C.P.Lond. London: Adlard & Son and West Newman. 1916. (6d.)

This pamphlet records a number of cases of pneumonia and tuberculosis following and apparently caused by trauma. The author points out the importance of these cases in connection with compensation for accident, and a perusal of the numerous cases cited should prove of service to one in difficulty with cases of this kind.

The Theory and Practice of Massage. By Beatrice M. Goodall-Copestake. London: H. K. Lewis & Co., Limited. 1917. (8s. 6d. net.)

Intended as an introduction to the subject of massage for the large number of students who are now entering upon it as a work of national usefulness, Miss Goodall-Copestake's volume is eminently suited to fulfil its purpose. It opens with a general consideration of massage in its historical aspect, passes to a definition of the movements employed and a description of their physiological effect, and next devotes four clearly and amply illustrated chapters to the details of the various manipulations employed in different regions of the body and to breathing exercises. The remainder of the book is occupied by an account of the various medical and surgical disorders in which massage may be useful, and of the methods to be employed in each. The manipulations and exercises described are based on Ling's Swedish system. The author's style is easy and clear; and though her book makes no attempt to supply the place of the larger treatises, it will be found to be an excellent and accurate *résumé* of the subject, and one on which beginners may confidently rely.

Staying the Plague. By N. BISHOP HARMAN, M.A., M.B., F.R.C.S. London: Methuen & Co. 1917. (1s. net.)

MR. BISHOP HARMAN has written this book to promote an intelligent and progressive national activity in the campaign against venereal disease. It begins with a consideration of healthy sexual function, the relation of sex to human ideals, and the abasement of sex in prostitution; it passes on to a brief but adequate description of the forms of venereal disease, followed by an analysis of the Report of the Royal Commission, and by a somewhat more detailed review of the effects of venereal diseases upon the second and third generations; and it ends with an account of the measures adopted or suggested for the treatment of existent disease, and of the real remedy or rather prophylactic, namely, early marriage and education of the children. The book is simply and temperately written, and should do much to promote a better understanding of the subject, and so to diminish the prevalence of disease. But where in these days of slaughter are sufficient husbands to be found for all the early marriages?

Diseases of the Skin. By Sir MALCOLM MORRIS, K.C.V.O. Sixth Edition. London: Cassell & Co., Limited. 1917. (12s. net.)

SIR MALCOLM MORRIS's work is already so well known that but few words are necessary in introducing its sixth edition. It preserves all the features which have made it widely consulted;

it is amply illustrated, and the illustrations give, within the limits of photography, very clear pictures of the diseases with which they are associated. If we have any quarrel with them, it is with the few coloured plates, some of which seem to represent an earlier process of reproduction than that which is illustrated by recent skin atlases. It is a little curious that the representation of eczema rubrum, of which at least redness should be a characteristic, is portrayed in black and white. On the vexed question of eczema in general, Sir Malcolm Morris adheres, perhaps wisely, to the older conception of the disease; but the newer views have put him to somewhat awkward shifts in his definition. A definition that requires a couple of pages of qualifying clauses to buttress it has somewhat uncertain foundations. These criticisms apart, the book is highly to be commended, both as a general conspectus of diseases of the skin, and for the wealth of its therapeutic resources.

The "Nauheim" Treatment, in England, of Diseases of the Heart and Circulation. By LESLIE THORNE THORNE, M.D., M.R.C.S., L.R.C.P. Fifth Edition. London: Baillière, Tindall & Cox. 1918. (5s. net.)

To the present edition of Dr. Thorne Thorne's well known book chapters have been added dealing respectively with arterio-sclerosis and high blood-pressure; angina pectoris; valvular disease and fatty heart; influenzal myocarditis; soldier's heart and heart-strain; and irritable heart and Graves' disease. In these chapters he has been able to deal more specifically than in former editions with the indications for Nauheim treatment in particular conditions of the heart and circulation. The Nauheim treatment is now well known; it is hardly yet sufficiently realised that it can be carried out at home as well as at Nauheim, its success or failure depending mainly upon the degree of attention to details which the physician gives. That excellent results can be obtained in this country Dr. Thorne Thorne shows both by verbal and by graphic records of his cases. An eminent myogenist has recently expressed the opinion that the figures indicating diminution of the area of dulness in cases of dilated heart after various methods of treatment are "mostly fakes;" it would be interesting to hear his verdict upon the indications of improvement shown by the polygraphic tracings with which the present edition is largely illustrated.

Tropical Diseases. By SIR PATRICK MANSON, G.C.M.G., M.D., LL.D. Sixth Edition. London: Cassell & Co., Limited. (16s. net.)

THE sixth edition of Sir Patrick Manson's manual of tropical diseases has followed its predecessor at an interval of but three and half years, yet it bears witness to many advances in knowledge made in that short time. The life-history of *Bilharzia hæmatobia* has been worked out by Leiper, the mosquito responsible for the transmission of dengue has been discovered, our knowlege of pellagra has been materially increased by Sambon's researches, and much has been added to our information in regard to mosquitoes, tse-tse flies and ticks. Of all these changes the author has taken notice, and he has also thoroughly revised the whole text of the book. In the chapter on mosquitos and in the article on tse-tse flies he has had the assistance of Lieutenant-Colonel Alcock, and in the chapter on pellagra that of Dr. Sambon. Many new illustrations have been added, the figures in the text now numbering 254, while there are also 16 plates. The present edition cannot but add to the reputation which the book already enjoys as the best manual of tropical diseases to be found within the compass of a moderate-sized volume.

Physical Remedies for Disabled Soldiers. By R. FORTESCUE FOX, M.D. With Chapters by Major R. TAIT MACKENZIE, R.A.M.C., F. HERNAMAN-JOHNSON, M.D., and J. B. MENNELL, M.D. London: Baillière, Tindall & Cox. 1917. (7s. 6d. net.)

DR. FORTESCUE FOX and his collaborators, of whom Major Mackenzie and Dr. Mennell write upon the details of massage, and Dr. Hernaman-Johnson on electricity and radiation, have given in this volume a succinct and very useful account of the methods of physical treatment by which so much has been done in recent years. The greater part of the book is from the pen of Dr. Fortescue Fox, who is responsible for the sections on hydrological remedies and their indications, and on the provision for physical remedies in hospitals, spas, and health resorts, and also for the general description of forms of mechanical treatment. It contains information upon all the latest forms of baths and appliances for dealing with stiffened joints and limbs; it shows how the bath treatment in particular is applicable to a variety of internal conditions, such as cardio-vascular disorders, nervous affections, digestive conditions, and even tuberculosis; it is amply and instructively illustrated; and it should be in the hands of all who have to do with the orthopædic treatment of the sick and wounded.

Massage: Its Principles and Practice. By JAMES B. MENNELL, M.D., B.C.Cantab. London: J. & A. Churchill. 1917. (8s. 6d. net.)

THIS book is constructed on somewhat different principles to those of the ordinary text-book of massage. While dealing fully with the practical aspects of the subject, it is intended rather for the experienced masseur than the beginner, and aims at demonstrating to him the *rationale* of the treatment he employs. In accomplishing this object, which it does in an admirable fashion, it at the same time serves the purpose of a guide to medical men in the choice of particular manipulations or exercises applicable to particular cases, and indicates to them that their responsibility is not ended when they have ordered "massage." Their prescription should be based upon knowledge of the ends they hope to attain and of the means to their attainment, and Mr. Mennell's book will be found a far better guide to them than most books on the subject, which are written mainly for students intending to become practitioners of the art. He speaks of some of his views as unorthodox; the most striking unorthodoxy which his work presents is its insistence on the avoidance of pain. Too often massage is loosely prescribed or performed with some such phrase as—"It's bound to hurt you at first, but that will pass off as you get used to it." The patient failing to improve or becoming worse, the treatment is abandoned, when persistence in right methods might have induced a cure. Both to the masseur and to the medical practitioner, this book, which is abundantly illustrated and furnished with a commendatory introduction by Sir Robert Jones, should prove a real illumination of the subject with which it deals.

The Treatment of Tabetic Ataxia by Means of Systematic Exercise. By Dr. H. S. FRENKEL. Second Revised and Enlarged English Edition by L. FREYBERGER, M.D. London: William Heinemann. 1917. (12s. 6d. net.)

FRENKEL'S method of treating the ataxy of tabes dorsalis by means of carefully planned exercises is now so well known and approved as to find mention in all the text-books, yet comparatively few are familiar with its details, although the first English translation of his work appeared in 1902. The text of the present edition has been thoroughly revised by the English translator, and notes have been added on the medical treatment that is often required simultaneously with the use of the exercises. In its present form, and amply illustrated as it is, the book provides a very clear account of a form of treatment which often yields much benefit, and no one who has to do with the management of a case of locomotor ataxia can fail to profit materially by its perusal.

Transactions of the College of Physicians of Philadelphia. Third Series. Vol. XXXVII. Philadelphia: Printed for the College. 1915.

THE present volume of *Transactions* contains all the papers before the College from January to December, 1915, inclusive. A large variety of subjects is discussed, and the treatment of these subjects is naturally of varying degrees of excellence, but it is a feature of these *Transactions* that the discussion following the paper is reported at length, and is often of value either as elaborating or correcting the views of the original contributor. Among the twenty-two papers devoted to general medicine and surgery, four are concerned with various aspects of disease of the pituitary body and the physiology of the gland, and these with the discussion form a valuable contribution to the knowledge of minor degrees of pituitarism. Many of the other papers are of clinical interest, some are concerned with serological phenomena such as the Abderhalden reaction, others deal with sanitation and public health; while the considerable portion of the book given to the proceedings of the ophthalmological section contains many cases of value. It will be seen that there is material in the volume which will appeal to a wide variety of readers.

Materia Medica, Pharmacy, Pharmacology and Therapeutics. By W. Hale White, M.D. Sixteenth Edition. London: J. & A. Churchill. 1918. (7s. 6d. net.)

There can be few truer friends of the medical student than he who is able to make the subject of materia medica interesting. To the average man there is more sheer "grind" about it, more purely mechanical memorising of doses and "actions," than exists in any other subject in the curriculum; and the impermanency of such laboriously catalogued knowledge is very commonly shown in the student's early endeavours in the art of writing a prescription. To him who can supply something of a guiding principle through the maze of drugs must fall a rich reward in popularity; and that Dr. Hale White's arrangement of the subject supplies an obvious want is evidenced by the almost annual appearance of edition after edition of his work. We may have nothing new to say of an old and well-tried friend, but each of his visits is more welcome than the last, particularly if he keeps his mind attuned to the changes going on around him. This sixteenth edition, while it wears the familiar features of its predecessors, is in every respect up to date, and includes a valuable appendix on the special regulations that have been made owing to the war.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

Antitoxin for Gaseous Gangrene. By Carroll G. Bull, M.D. (in *New York Medical Journal*).—Experiments seem to establish the fact that the local destruction of tissues, and the lethal effects of Bacillus Welchii infections, are due to a specific bacterial toxin. Under suitable cultural conditions, B. Welchii produces a soluble toxin which, after separation from the bacilli, is capable of causing the essential lesions of gaseous gangrene, and possesses the physical and biological properties of an exotoxin. By immunising animals with the bacterial free toxin an immune serum has been obtained which has the power of neutralising the toxin both *in vitro* and *in vivo*, as well as preventing and controlling infections with the bacilli. It is indicated, therefore, that B. Welchii should be classed with B. diphtheriæ and B. tetani as a toxin-producing organism, and the infections with this organism can also be successfully prevented and controlled by neutralising its toxin with a specific immune serum.

The antitoxin is being prepared on a large scale from horses, and very potent serums have been obtained. A few cases of gaseous gangrene in man have already been treated, in which the efficacy of the antitoxin was unmistakable. The antitoxin was administered intravenously and locally about the wound.

Radiotherapy of Tuberculous Peritonitis. By Dr. E. Albert Weil (*Paris Medical*, 13th October, 1917).—Dr. Albert Weil gives details of some interesting cases of *x*-ray treatment of cases of tuberculous peritonitis.

CASE I.—Girl of seven years. Ordinary sanatorium treatment having failed, she was brought to his department in the Hospital Trousseau. She was then in a state of extreme weakness. The abdomen was much swollen, although she had just been tapped. Her abdomen was marked off in four divisions, each of which received in successive days—owing to insufficiency of apparatus—a dose of strong rays (filtered through 4 mm. of aluminium), equal to 12 H., reckoned under the filter. Fifteen days after the series had been applied the temperature had sensibly diminished (from 39° C. to 38° C.); the abdomen had noticeably decreased in volume, although there had been no further tappings; but there was no change in the quantity of albumen in the urine. A second series of irradiations was administered, lasting twenty days (same dose), and a fortnight after this series was finished, she rose, walked, had a normal temperature; her abdomen was almost of average volume, and her liver did not extend beyond the false ribs; and there were only a few centigrammes of albumen in the urine. Other three series were administered. Thereafter the child could be considered cured. She was examined three months afterwards when her condition was found good, no trouble of any kind having arisen.

Dr. Albert Weil's division of the abdomen is as under:—Right, over umbilical, left o—u; right under—u; left, u—u. He begins with a dose of 12 to 14 units H. of strong x-rays, filtered through 4 or 5 mm. of aluminium. Since he began using the Coolidge tube he has employed the 5 mm. filter. The tube is regulated to have a spout of more than 20 c.c., the current being 1·5 to 2 milliampères. The irradiations are repeated monthly, the dose being diminished each time. Generally the treatment is successful in five to six months.

—JAMES SCOTT.

DISEASES OF THE EAR.

A Method of Medicating Eustachian Bougies. By Dr. Lee M. Hurd (*The Laryngoscope*, December, 1917).—Dr. Hurd, who appears to make considerable use of medicated bougies to dilate stenosis and to stimulate the lining membrane of the Eustachian tubes, here describes the method by which he prepares the bougie.

Celluloid bougies are used, but in place of dipping them in aqueous solutions or coating them with some oily preparation, or, as some recommend, wrapping cotton-wool around the bougie so that a larger quantity of active agent may be conveyed to the orifice of the Eustachian tube if no further, he, by the use of gum acacia, gets the medicament to adhere to the bougie.

He uses nitrate of silver. With the gum acacia in a narrow test-tube he makes a saturated solution in a water bath, then he adds the nitrate of silver making the resulting solution of from 1 to 10 per cent. The bougie is dipped into this solution to a depth of from one inch to an inch and a half, then it is withdrawn and allowed to dry; when dry it is again dipped, and again allowed to dry. The silver salts remains in an active condition for some days.

By their use he claims to have improved the condition of the tubal mucosa in many cases, and without exciting middle-ear inflammation, or other complications.—WALKER DOWNIE.

Ossiculectomy in Chronic Adhesive Otitis. By Dr. A. J. Brady, Sydney Hospital, N.S.W. (*The Journal of Laryngology*, February, 1918).—This is a short paper written by Dr. Brady, after reading the report of a discussion on this subject at the Royal Society of Medicine, London, in order to combat the pessimism of those who took part in that discussion. He gives details of three cases in which he excised the drum-membrane, the malleus and the incus, on account of constant tinnitus so severe as to prevent sleep.

In one case the result was excellent. The patient was a nun, aged 25 years at time of operation. The hearing was dull, and there was distressing tinnitus in the left ear. The tympanic membrane was thickened, opaque, and indrawn.

Various forms of treatment, local and general, had given no relief. Relief of the tinnitus followed excision of the membrane and ossicles, but no improvement in hearing was then observed. Months later the hearing was found to be markedly improved, and now—twenty years after the operation—she can hear ordinary conversation by this ear, and "carries on her daily life without trouble; tinnitus is not complained of." "The middle ear is completely epidermised, dry and clean."

In the second case there was "complete relief from tinnitus, and hearing when tested was almost equal to the good ear," but the patient resumed his occupation and was not seen again. In the third case no improvement followed the operation.—WALKER DOWNIE.

Books, Pamphlets, &c., Received.

Ambulance de "L'Océan" la Panne: la Prothèse du Membre Inférieur, par le Dr. F. Martin. Avec 45 figures dans le texte. Paris: Masson et Cie. 1918.

Ambulance de "L'Océan" la Panne: Travaux publiérs, sous la Direction du Dr. A. Depage; Secrétaires de la Rédaction, Dr. A. P. Dustin, Dr. G. Debaisieux. Paris: Masson et Cie.

Les Lésions du Corps Thyroïde dans la Maladie de Basedow, par Gustave Roussy. Paris: Masson et Cie. 1914.

L'Évolution de la Plaie de Guerre: Mécanismes Biologiques Fondamentaux, par A. Policard. Avec figures et planches hors texte. Collection Horizon: Precis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1918. (4 fr.)

Les Premières Heures du Blessé de Guerre du Trou D'Obus au Poste de Secours, par P. Bertein et A. Nimier, Préface du Médecin Inspecteur Jacob. Collection Horizon: Précis de Medicine et de Chirurgie de Guerre. Paris: Masson et Cie. 1918. (4 fr.)

Les Blessures du Cerveau: Formes Cliniques, par Ch. Chatelin. Préface du Professeur Pierre Marie. Deuxieme edition. Remaniée et Augmentée. Collection Horizon: Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1918.

Aids to Rational Therapeutics, with U.S.A. Pharmacopœia Equivalents, by Ralph Winnington Leftwich. London: Baillière, Tindall & Cox. 1918. (3s. net.)

The Diagnosis and Treatment of Venereal Diseases in General Practice, by L. W. Harrison, D.S.O., Lieutenant-Colonel, R.A.M.C. London: Henry Frowde and Hodder & Stoughton. 1918. (21s. net.)

The Fitting-out and Administration of a Naval Hospital Ship, by Edward Sutton, Fleet-Surgeon, R.N. Bristol: John Wright & Sons, Limited. 1918. (8s. net.)

Tumours: Their Nature and Causation, by W. D'Este Emery, M.D., B.Sc. Lond. London: H. K. Lewis & Co., Limited. 1918. (5s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 27TH APRIL, 1918.

	WEEK ENDING			
	April 6.	April 13.	April 20.	April 27.
Mean temperature, . .	43·2°	44·2°	41·9°	48·3°
Amount of rainfall, . ins.	0·23	0·21	0·04	0·00
Deaths (corrected), . .	285	303	302	330
Death-rates, ...	13·3	14·2	14·1	15·4
Zymotic death-rates, . .	1·2	1·0	1·3	2·4
Pulmonary death-rates, .	3·1	2·7	2·7	3·6
DEATHS—				
Under 1 year, . . .	46	40	51	57
60 years and upwards, .	85	86	73	89
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	9	11	17	29
Scarlet fever, . . .	1	1	..	...
Diphtheria, . . .	5	...	2	7
Whooping-cough, . .	10	8	7	9
Enteric fever, . . .	1	...	...	...
Cerebro-spinal fever, . .	1	2	1	2
Diarrhœa (under 2 years of age),	3	5	6	7
Bronchitis, pneumonia, and pleurisy, . . .	54	41	36	57
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	4	1	5	1
Diphtheria and membranous croup, ...	34	32	34	26
Erysipelas, . . .	19	14	18	7
Scarlet fever, . . .	23	32	21	13
Typhus fever, . .	1	3	1	1
Enteric fever, . . .	1	2	2	5
Phthisis, ...	51	48	66	56
Puerperal fever, . .	2	4	5	3
Measles,*	172	465	490	477
Ophthalmia neonatorum, .	5	16	14	11

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *8th May*, 1918.

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ORIGINAL ARTICLES.

POST-MALARIAL SEVERE ANÆMIA.

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and

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Shortly after our arrival in Macedonia we were impressed by the occurrence after malaria of cases of grave anæmia, apparently of the pernicious type. The results of our examination of such cases were so striking that it was decided to examine as many cases—not only severe, but moderately anæmic cases—as time and opportunity permitted. A large amount of routine work and shortage of apparatus hampered work a little, but it was found possible to examine eighty cases, involving one hundred and twenty-one full blood-counts, and complete physical examinations.

With the exception of a few Bulgar and German prisoners, the patients were all Serbian soldiers. Hæmoglobin was estimated in the majority of cases by Sahli's method, and in some by Gowers'. In unusual results both methods were employed, and of course controls were done with the blood of normal individuals from time to time. The erythrocytes and leucocytes were counted by means of Thoma's apparatus. Leishman's stain was employed throughout. For the differential results, five hundred cells were counted in most cases, and where there was a leucocytosis, one thousand.

The cases have been subdivided into *severe, moderately severe,* and *mild.* The twenty-two severe cases had red cell counts of two millions or under per c.mm., the fifteen moderately severe of under three millions, and the forty-three mild of three millions and over.

The blood-counts of the severe cases are shown in a tabular form. A short summary of each of the severe cases will be given first, and then the general results and conclusions derived from examination of all the cases.

SEVERE CASES.

CASE I.—Sergeant D., aged 50 years, gave a history of subtertian malaria of one month's duration. On admission there was marked anæmia with great pallor of the visible mucosæ, skin of a lemon yellow colour, considerable enlargement and tenderness of the spleen, loud hæmic murmurs and venous hum, and striated and flame-shaped hæmorrhages in both retinæ. There was no oral sepsis, and the stools were normal. The blood was thin and watery. Poikilocytosis was considerable, and megalocytosis marked. One red cell of 17 m. was seen, and sizes from 10 m. to 14 m. were common. Megaloblasts were present, and there was some polychromasia. The patient was very ill for some time after admission, with increasing pallor, tachycardia, œdema of the feet, and breathlessness. Three weeks after admission about 30 c.c. of blood were directly transfused, and afterwards liquor arsenicalis by mouth was given in increasing doses. Four days after transfusion he was semi-conscious, with marked cardiac failure and œdema, and some hypostatic congestion of the lungs. The urine contained much urobilin, no bile, a cloud of albumen on boiling, and no albumose. Two days later, after being very ill, he began to improve, and progress was steady. There was a little irregular fever throughout, but with many apyretic intervals. The maximum temperature recorded was 100·6° F. Crescent forms appeared in the blood as improvement took place. Two months after admission he was evacuated to Biserta, being then almost well. He was again seen seven months later, and was then on full duty and absolutely well, with no sign of anæmia.

Case II.—Private T., aged 40 years, was admitted on 3rd November, 1916, having suffered from malaria for two months. He did not improve after admission, and when seen on 18th December, 1916, was intensely anæmic. The skin was pale and distinctly yellow. The mucosæ were almost white, and showed no abnormal pigment. Loud hæmic murmurs and venous hum were present. The spleen was much enlarged and hard but not tender. The liver was not enlarged. There was no oral sepsis. Anorexia and constipation were marked. The urine was normal. Striated and flame-shaped hæmorrhages were present in both retinæ. The discs were pale and the veins full. The blood flowed easily from the puncture, and was thin and watery, appearing to clot quickly. The films stained evenly and well with slight polychromasia and no basophilia. There was considerable poikilocytosis and much megalocytosis, many cells of 10 to 12 m. being seen, and a few of 14 m. One large polychromatophilic cell measured 21 m. There were a few microcytes and shadow cells. Megaloblasts were present, but no normoblasts or parasites. At first he could not take arsenic by the mouth, and on 22nd December, 1917, 0·2 gramme of kharsivan was given intravenously. Improvement began at once, but proceeded slowly, arsenic being given orally. On 10th February, 1917, he left on hospital ship, much improved.

This case showed only an occasional slight rise of temperature.

Case III.—Private Milan Y., aged 30 years, was admitted on 10th December, 1916, suffering from diarrhœa and malaria, but no parasites were found in the blood. On admission, however, he was very anæmic, and had some œdema of the ankles. The spleen was then 3 inches below the costal margin. The diarrhœa ceased a day after admission. The stools had been loose and pea-soupy, but no organisms of the typhoid or dysentery group were found.

When seen on 22nd December, 1916, the skin was yellowish, and the visible mucosæ pallid. Hæmic murmurs were present, and a large flame-shaped hæmorrhage was present in the right retina. The spleen was just palpable and tender. The edge of the liver could be felt. There was no oral sepsis.

The blood was of thin appearance, and showed a severe anæmia, with but little poikilocytosis and many megalocytes from 10 m. to 15 m. There was very little polychromasia and no basophilia. The polynuclear leucocytes varied in size a good deal. Megaloblasts were present.

On 1st January, 1917, 0·15 gramme salvarsan was given intravenously, and this was followed by the oral administration of arsenic. Steady improvement took place in every direction, and when he was sent to Biserta on 7th February, 1917, he was almost well.

CASE IV, aged 42 years, was admitted on 25th December, 1916, having had malaria for three months. This patient showed notable anæmia with yellow skin and pallid mucosæ, some cardiac dilatation and systolic murmurs at all areas, and a venous hum. There was no oral sepsis, and the stools and urine were normal. The spleen was large and hard, but the liver was not enlarged. There was slight fever. Both retinæ showed some swelling, with several small recent hæmorrhages.

The blood was very watery and showed marked changes—polychromasia, occasional basophilia, some poikilocytosis and much megalocytosis. Many megalocytes measured from 11 to 12 m. There were no megaloblasts or parasites seen. Considerably improved, he was evacuated on hospital ship on 12th January, 1917.

CASE V.—Private Miloye R., aged 22 years, admitted on 16th May, 1917, had been previously in our hospital from 12th March, 1917, to 22nd April, 1917. There was at that time slight anæmia, and the spleen was much enlarged, but he was dismissed well. Shortly after dismissal fever again appeared.

On admission he was very ill, and rather breathless. There was some œdema of the ankles. Anæmia was marked, the skin being of a pallid, dirty yellow colour, and the visible mucosæ very pale. The temperature was elevated to 102°. The tongue and mouth were foul and covered by sordes, but the teeth were good. The heart was considerably dilated, measuring transversely 13½ centimetres, and a faint systolic murmur was audible at the apex. The liver was not enlarged, but the spleen was easily felt and slightly tender. The stools were normal. The urine was dark amber in colour, and contained a good deal of urobilin, but no bile or albumen. Hæmorrhages were present in the right retina.

The blood was pale and watery. Films stained fairly well with a little ring staining, but no polychromasia or basophilia. There was much poikilocytosis and megalocytosis. No parasites were seen, but malarial pigment was present in some large mononuclears. No nucleated reds were seen.

The patient remained very ill, and became more anæmic. A pericarditis developed, but without effusion. On 18th May 30 cgm. of galyl were given intravenously, in addition to stimulating treatment. On 19th May he was much the same. The blood was then very thin and watery, resembling water in which meat had been rinsed. The reds showed a strong tendency to polychromasia, and there was occasional basophilia. The leucocytes exhibited considerable variation in size, and all gradations from myeloblast to fully formed myelocyte were present; 0·4 per cent mast myelocytes were noted, one measuring 20 m. by 21 m. Megaloblasts and normoblasts were present, the latter being fairly numerous. The normoblasts were strongly polychromatophilic, some showing basophilia and one mitotic changes. On 20th May improvement began, and on the 21st this was evident in the blood. On that day there were 213 normoblasts per c.mm. The leucocytosis present on the 19th persisted. On 25th May 35 cgm. galyl were given intravenously. Improvement was rapid, and the patient ultimately made a perfect recovery, being dismissed on 14th July, 1917. He was again seen at the end of August, and was then in robust health.

After the last dose of galyl the administration of arsenic was begun by the mouth. The initial fever lasted six days, and thereafter there was only a very occasional rise to 99° F.

CASE VI.—Private T., aged 37 years, had suffered more or less from malaria since April, 1916, and had treatment by quinine, orally and intramuscularly. On 26th May, 1917, he had an attack of Flexner dysentery, with fever due to malaria. He was then very anæmic, with a palpable and tender spleen and hæmic murmurs, but improved considerably under intramuscular injections of quinine. Anæmia, however, became more pronounced, and when seen on 5th August, 1917, the skin was pallid and the mucosæ almost white. Systolic murmurs were audible at all areas, and there was a loud venous hum. The lungs appeared normal. The spleen was 2 inches below the costal margin, hard and not tender, but there was no hepatic enlargement. There was no oral sepsis. The stools were offensive and contained mucopus, but were negative on bacteriological examination. The urine was normal. The chart showed irregular fever from time to time. Hæmorrhages were present in both retinæ.

The blood flowed very freely, and was thin, watery, and light red. Films stained well with slight polychromasia. There was moderate poikilocytosis, and many megalocytes and microcytes. The lymphocytes were almost entirely small. A few normoblasts were present.

On 7th August 20 cgm. galyl were given intravenously. Next day he felt better, and there was slight general improvement, but none in the blood. On the 14th the dose of galyl was repeated. By the 16th he was far from well, with cardiac failure and some œdema. The blood was then exceedingly pale, hardly staining the cotton wool. The hæmoglobin was difficult to estimate, but using double quantity of blood it appeared to be 7 per cent. More normoblasts were present, one showing a "clover" nucleus.

There was much megalocytosis and microcytosis. He gradually sank, and died on 17th August.

This case presented the lowest red cell count of the series, 404,000 per cubic millimetre. It also showed a persistent and high lymphocytosis, the highest count being 55·75 per cent.

Summary of autopsy.—Old and slight mitral endocarditis: œdema of lungs; marked enlargement of spleen (greatest measurement, 8 inches), which was firm and deep red; pallor of liver and kidneys; many healed and a few almost healed dysenteric ulcers in large intestine, and a few in ileum; bone-marrow in the ribs, the entire length of the shaft of the femur and the humerus deep red in colour and somewhat fluid.

Microscopic examination.—Films of the bone-marrow showed numerous normoblast and red corpuscles, and many myelocytes and eosinophiles. The marrow was quite definitely not megaloblastic. No parasites were seen.

Films of the spleen were not satisfactory. No nucleated reds or parasites were noted.

Summary of histological examination.—There was considerable cloudy swelling of liver, heart, and kidney. Sections of kidney, in addition, showed a number of small cortical hæmorrhages. Hæmorrhages in moderate amount were also present in the cortex of the suprarenal. There was thickening of the reticulum, vascular sheaths, and septa of the spleen, which contained much malarial pigment. Much pigment was also present in the liver, and a very small amount in the bone-marrow. Sections of the bone-marrow were not so satisfactory as the fresh films, and gave no further information. No parasites were seen in liver, spleen, or bone-marrow.

Iron reaction.—The liver gave a very pronounced iron reaction, almost all the hepatic cells containing blue granules. Some of the endothelial cells showed iron pigment, but much more frequently the characteristic malarial pigment.

In the suprarenal a considerable number of blue granules were seen in the cells of the cortex, but more striking was a diffuse blue colouration, also practically limited to the cells of the cortex.

The spleen showed traces of the reaction, the kidney and bone-marrow none.

Case VII.—Private N., aged 50 years, had his first attack of malaria in 1913. For a month prior to admission he had malarial attacks frequently, and was unconscious on one occasion. The temperature had risen daily to between 99° and 100° F., and subtertian parasites were found in the blood. The urine was dark in colour, but contained no bile or albumen. Anorexia was marked.

When seen on 13th October, 1917, he was very anæmic. The skin was lemon-yellow and pale, and pallor of the mucosæ was marked. Hæmic murmurs and a venous hum were present. The spleen was palpable and tender, and retinal hæmorrhages were noted in both eyes. The urine was dark from urobilin.

The blood flowed easily, and was pale and watery. Films stained well, with slight polychromasia, and very occasional basophilia. There were marked poikilocytosis and megalocytosis and many microcytes. Many very large megalocytes and myeloblasts were observed. No parasites were seen, nor any pigment in the large mononuclears. Both normoblasts and megaloblasts were noted. Patient was vigorously treated with intramuscular quinine, as his fever was persistent although slight. He had three intravenous injections of 20 cgm. galyl. When last seen on 9th November, 1917, he had not improved. He was extremely difficult to feed, and had evidently little or no desire to recover.

CASE VIII.—A Bulgarian prisoner, aged 25 years, had suffered from malaria for two months. When seen on 8th August, 1917, the skin was very pale, with only a slight yellow tint. The visible mucosæ showed no abnormal pigmentation, and were very pale. There was no oral sepsis, and the stools were normal. Hæmic murmurs and a venous hum were present. The spleen reached to within 2 inches of the umbilicus, but the liver was not enlarged. Hæmorrhages were noted in the right retina.

The blood looked thin, and was light red in colour. Films showed considerable polychromasia but no basophilia, moderate poikilocytosis, much megalocytosis and a few microcytes. Megaloblasts and normoblasts were present. On increasing doses of liquor arsenicalis patient improved considerably, and on 26th September many normoblasts were noted. In an emergency he was transferred to another hospital on 23rd October. He had then greatly improved, but no count was obtained.

CASE IX.—Private Milorad Y, aged 19 years, was admitted

SEVERE CASES.

No. of Case	Date.	Age.	hrocytes.	ocytes.	oglobin.	ur Index.	neuclear trophiles.	inophiles.	ophiles.	phocytes.	Large onuclears.	sitionals.	locytes.	loblasts.	aloblasts.	moblasts.
	10/2/17		2,916,000	3,500												
15	30/12/16	38	1,500,000	2,600	31	1·03	48·5	1·0	0·0	24·0	8·0	1·0	4·0	13·5	39	13
16	4/2/17	43	1,636,000	5,800	30	0·93	55·2	0·8	0·2	35·2	3·6	1·6	1·8	1·6	0	0
	22/2/17		2,152,000	6,200	41	0·95	39·5	2·5	0·5	48·25	7·25	0·5	0·0	1·5	31	31
17	21/1/17	40	1,800,000	7,500	44	1·2	42·0	3·2	1·0	43·6	4·8	2·8	0·4	2·2	0	0
18	20/1/17	48	1,928,000	5,800	35	0·92	45·0	1·0	0·0	39·5	10·0	1·0	0·5	3·0	29	29
	24/1/17		1,940,000	2,120	35	0·92	...	...	...	...	...	...	...	...	...	...
	22/2/17		2,648,000	7,200	52	1·0	42·4	2·0	2·0	41·2	11·2	0·0	0·0	1·2	0	0
19	30/6/17	40	1,952,000	2,850	33	0·8	51·6	2·8	1·2	36·4	3·2	3·2	0·0	1·6	0	22
20	8/1/17	30	1,960,000	5,800	28	0·7	54·4	0·0	0·2	33·2	8·0	0·0	0·0	4·2	0	23
	20/2/17		4,024,000	7,200	61	0·76	57·6	3·2	0·2	24·3	12·0	0·7	0·2	1·8	0	12
21	12/3/17	30	2,016,000	6,100	44	1·1	45·2	9·2	0·2	37·6	6·0	0·3	1·0	0·5	10	30
	23/3/17		2,720,000	6,100	51	0·9	46·2	10·0	1·0	31·8	9·0	0·4	0·4	1·2	24	48
22	25/1/17	45	2,056,000	1,300	36	0·8	53·5	1·0	3·0	31·5	8·5	1·0	0·0	1·5	13	0
	19/2/17		3,248,000	6,000	47	0·7	65·75	2·0	0·0	19·5	10·25	0·0	0·0	2·5	0	0

SEVERE CASES.

No. of Case.	Date.	Age.	Erythrocytes.	Leucocytes.	Hæmoglobin.	Colour Index.	Polynuclear Neutrophiles.	Eosinophiles.	Basophiles.	Lymphocytes.	Large Mononuclears.	Transitionals.	Myelocytes.	Myeloblasts.	Megaloblasts.	Normoblasts.
			Per c.mm.	Per c.mm.	Per cent.		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per c.mm.	Per c.mm.
1	13/12/16	50	1,112,000	3,300	23	1·04	68·0	0·0	0·0	25·4	1·3	0·0	0·7	4·6	22	0
	27/12/16		760,000	5,600	14	1·0	71·0	1·0	2·0	23·2	1·8	0·0	0·2	2·6	56	0
	1/1/17		594,000	10,500	13	1·18	77·2	0·6	0·0	17·6	1·0	0·0	0·4	3·2	63	147
	8/1/17		1,616,000	4,300	31	0·9	69·0	0·5	1·0	21·5	2·5	0·0	0·0	5·5	0	0
	24/1/17		2,008,000	1,700	37	0·92	51·0	0·0	1·0	36·0	8·0	0·0	1·0	4·0	0	51
	5/2/17		3,408,000	3,900	65	0·94	50·4	6·4	2·0	31·2	8·4	0·0	0·0	1·6	0	0
2	19/12/16	40	900,000	2,300	19	1·05	49·0	3·0	0·0	43·0	3·0	0·0	0·0	3·0	46	46
	1/1/17		1,952,000	4,700	35	0·92	61·5	1·5	1·0	27·5	5·5	0·0	0·0	3·0	69	69
	24/1/17		2,320,000	2,600	45	0·97	46·0	2·0	0·0	43·0	5·5	1·0	0·5	2·0	26	0
	10/2/17		2,564,000	4,000	42	0·84	54·75	3·25	0·5	25·25	14·0	0·25	1·0	1·0	0	0
3	22/12/16	30	1,072,000	2,400	20	0·9	63·2	1·6	0·0	29·6	2·4	0·0	0·4	2·8	19	0
	1/1/17		972,000	4,000	22	1·2	...	...	...	...	...	...	...	...	...	...
	9/1/17		1,532,000	3,850	28	0·93	65·25	0·5	0·0	18·0	10·75	2·0	0·5	3·0	19	38
	6/2/17		4,464,000	14,800	83	0·9	79·4	0·0	0·0	15·8	3·4	1·0	0·0	0·4	0	0
4	27/12/16	42	828,000	4,060	23	1·4	51·5	1·0	0·5	42·5	2·0	0·0	2·5	0·0	0	20
5	16/5/17	22	1,312,000	2,660	20	0·7	63·0	1·0	0·0	29·5	5·25	0·25	0·0	1·0	0	0
	19/5/17		890,000	10,200	17	1·0	71·6	0·6	0·1	15·2	6·1	0·5	4·2	1·7	20	122
	21/5/17		1,248,000	9,300	20	0·8	68·3	1·0	0·5	17·6	4·7	0·7	4·4	2·8	0	213
	26/5/17		1,778,000	3,300	36	1·08	67·4	2·6	0·2	23·8	4·2	0·8	0·2	0·8	0	19
	3/6/17		2,688,000	3,900	53	1·0	57·0	2·0	1·0	32·6	7·0	0·0	0·0	0·4	0	0
	14/6/17		4,024,000	6,000	69	0·86	52·4	2·6	0·8	38·0	5·6	0·0	0·0	0·6	0	0
	9/7/17		4,512,000	6,300	90	1·0	60·4	3·6	0·2	29·8	5·4	0·2	0·2	0·2	0	0
6	6/8/17	37	910,000	1,600	13	0·7	42·4	0·2	0·4	52·6	3·0	0·8	0·0	0·6	0	3
	10/8/17		696,000	1,300	15	1·1	55·75	1·0	0·25	37·75	4·25	0·5	0·0	0·5	0	6
	16/8/17		404,000	2,800	7	0·8	40·8	0·0	0·0	55·4	3·2	0·0	0·0	0·6	0	28
7	13/10/17	50	936,000	2,400	18	1·0	60·6	1·6	0·0	32·0	3·0	0·0	0·8	0·2	5	5
	26/10/17		824,000	2,900	13	0·8	65·2	1·6	0·2	26·4	2·6	0·2	1·6	2·2	6	11
	31/10/17		768,000	2,200	11	0·78	63·4	1·6	0·2	24·6	8·6	0·4	0·0	1·2	0	35
	6/11/17		564,000	8,000	12	1·09	78·4	1·4	0·1	14·6	3·6	0·3	0·5	1·1	8	104
8	8/8/17	25	994,000	4,000	29	1·5	57·3	0·5	0·2	27·7	12·3	0·5	0·7	0·8	20	40
	26/9/17		1,584,000	2,100	37	1·19	37·0	3·0	0·2	41·4	16·6	0·6	0·6	1·2	4	126
9	6/1/17	19	1,044,000	3,200	20	1·0	53·5	1·0	0·0	37·5	4·0	0·0	0·0	4·0	66	0
	14/1/17		1,008,000	3,800	15	0·75	38·4	1·3	0·3	52·2	2·8	1·5	0·7	2·8	108	268
	23/1/17		2,864,000	4,000	36	0·64	63·2	1·0	0·2	23·0	7·6	3·4	0·4	1·2	64	80
	6/2/17		3,752,000	6,600	54	0·7	45·0	4·3	2·6	40·0	4·0	3·3	0·4	0·4	0	0
	3/4/17		5,328,000	7,250	89	0·84	58·0	0·0	0·0	31·0	7·0	3·0	0·0	1·0	0	0
10	25/12/16	50	1,204,000	2,700	24	1·0	75·5	0·0	0·0	19·0	2·0	0·0	1·5	2·0	0	0
11	29/12/16	42	1,298,000	2,600	23	0·9	63·8	1·6	0·8	26·8	3·0	0·0	1·2	2·8	20	5
12	12/10/17	57	1,232,000	11,500	27	1·1	73·9	1·6	0·3	13·7	5·8	0·1	2·7	1·9	57	184
13	28/9/16	30	1,248,000	3,750	29	1·2	60·0	1·0	1·0	21·0	5·0	0·0	5·0	7·0	150	0
14	29/11/16	24	1,200,000	4,000	20	0·8	41·2	7·6	0·0	42·4	2·4	0·0	4·8	1·6	80	80
	9/1/17		2,304,000	4,250	36	0·78	68·0	3·0	2·0	21·5	5·5	0·0	0·0	0·0	0	0
	10/2/17		2,916,000	3,500	46	0·79	47·6	2·0	2·0	36·0	10·0	0·4	0·0	2·0	0	0
15	30/12/16	38	1,500,000	2,600	31	1·03	48·5	1·0	0·0	24·0	8·0	1·0	4·0	13·5	39	13
16	4/2/17	43	1,636,000	5,800	30	0·93	55·2	0·8	0·2	35·2	3·6	1·6	1·8	1·6	0	0
	22/2/17		2,152,000	6,200	41	0·95	39·5	2·5	0·5	48·25	7·25	0·5	0·0	1·5	31	31
17	21/1/17	40	1,800,000	7,500	44	1·2	42·0	3·2	1·0	43·6	4·8	2·8	0·4	2·2	0	0
18	20/1/17	48	1,928,000	5,800	35	0·92	45·0	1·0	0·0	39·5	10·0	1·0	0·5	3·0	29	29
	24/1/17		1,940,000	2,120	35	0·92	...	...	...	...	...	...	...	...	...	...
	22/2/17		2,648,000	7,200	52	1·0	42·4	2·0	2·0	41·2	11·2	0·0	0·0	1·2	0	0
19	30/6/17	40	1,952,000	2,850	33	0·8	51·6	2·8	1·2	36·4	3·2	3·2	0·0	1·6	0	22
20	8/1/17	30	1,960,000	5,800	28	0·7	54·4	0·0	0·2	33·2	8·0	0·0	0·0	4·2	0	23
	20/2/17		4,024,000	7,200	61	0·76	57·6	3·2	0·2	24·3	12·0	0·7	0·2	1·8	0	12
21	12/3/17	30	2,016,000	6,100	44	1·1	45·2	9·2	0·2	37·6	6·0	0·3	1·0	0·5	10	30
	23/3/17		2,720,000	6,100	51	0·9	46·2	10·0	1·0	31·8	9·0	0·4	0·4	1·2	24	48
22	25/1/17	45	2,056,000	1,300	36	0·8	53·5	1·0	3·0	31·5	8·5	1·0	0·0	1·5	13	0
	19/2/17		3,248,000	6,000	47	0·7	65·75	2·0	0·0	19·5	10·25	0·0	0·0	2·5	0	0

on 6th January, 1917, having suffered from subtertian malaria for three months. On admission there was some œdema of the legs and face. The skin was of a pale yellow tint. The visible mucosæ were very pale, and a few tiny patches of black pigment were present on the hard palate. Hæmic murmurs and a venous hum were present. The spleen was much enlarged and hard. Oral sepsis was absent and the stools and urine were normal. There were no retinal hæmorrhages. Crescents were found in the blood.

The blood was thin and pale. The red cells stained well with slight polychromasia, but no basophilia. Megalocytosis was fairly marked, and there was some poikilocytosis and a few microcytes. Megaloblasts were present, and one of these measured 20·38 m. by 15·6 m., and another 15·6 m. by 12·4 m.

By 14th January patient was very ill, having a good deal of fever and cardiac debility. On that date a "blood crisis" was noted, numerous normoblasts being present, and improvement began and steadily continued. On 16th February he went to Biserta much improved. He was seen by one of us (A. W. H.) on 3rd April suffering from a malarial attack, but there was no recurrence of serious anæmia, as will be seen by reference to the counts. Examination of films showed no megalocytosis, &c. Malarial pigment was present in the large mononuclear cells.

Case X.—Private G., aged 50 years, was admitted on 25th December, 1916, with anæmia and chronic malaria of two months' duration. He had suffered from malaria ten years ago. The skin was pale and yellow. The mucous membranes were also pale. There was no oral sepsis. Hæmic murmurs and a venous hum were noted, and hæmorrhages were present in both retinæ. The spleen was hard, and extended 3 inches below the costal margin. The liver was palpable, and the dulness in the nipple line measured 6 inches. The stools and urine were normal.

The blood was thin and watery. Films stained well with occasional polychromasia and basophilia. Megalocytosis and poikilocytosis were marked. No erythroblasts or parasites were present.

He was sent away on hospital ship on 12th January, 1917, and was then steadily improving.

CASE XI.—Private S., aged 42 years, was admitted on 29th December, 1916. No satisfactory history could be obtained. He exhibited all the signs of severe anæmia, the mucous membranes being very pale, and the skin a light lemon-yellow colour. The spleen was palpable, hard, and slightly tender, but the liver was not enlarged. Retinal hæmorrhages were not present. Oral sepsis was absent, and the stools were normal. The urine was slightly dark in colour, but otherwise normal (urobilin). A soft systolic murmur and a loud venous hum were present.

The blood was rather thin and watery in appearance. Poikilocytosis was moderate and megalocytosis distinct, cells from 10 m. to 14 m. being frequent. There was occasional well-marked polychromasia, but no basophilia. Megaloblasts and normoblasts were present. On 12th January, 1917, he went on a hospital ship. By that time he was steadily improving.

CASE XII.—Private G., aged 57 years, had suffered from subtertian malaria for some time. He stated he had only been ill for one month, but that is more than doubtful. When seen on 12th October, 1917, he was very ill and anæmic. The skin was pale and yellowish, and the mucous membranes white. The tongue was dry and coated, the breath offensive, the teeth poor, and the bowels obstinately constipated. The pulse was of poor quality, and ran from 106 to 112 per minute. The cardiac sounds were poor and toneless, and there was a faint pulmonic systolic murmur. The spleen was palpable and a little tender. The liver was not enlarged. The urine was normal. There was a little irregular pyrexia, to about 100° F. No retinal hæmorrhages were seen but the examination was difficult. The blood flowed easily, and was light red and watery. Films stained well, with a fair amount of polychromasia and occasional basophilia. Poikilocytosis and megalocytosis were marked, and there were many microcytes. Megaloblasts and normoblasts were present. The normoblasts were of varying size. Many were large and with a nucleus showing mitosis. There was a leucocytosis of 11,500. The myeloblasts were of all stages and sizes.

Despite vigorous treatment the patient sank rapidly and died on 16th October, 1917.

Summary of autopsy.—Heart pale and flabby; tricuspid and mitral dilatation; no valvular disease; hypostatic congestion of lungs; cloudy swelling and fatty degeneration of liver; spleen moderately enlarged and soft, with some perisplenitis; pallor of kidneys and brain; bone-marrow of ribs and most of femur deep red in colour.

Films of the spleen showed free pigment, many polynuclear leucocytes, mononuclears, and a few nucleated reds, and no parasites.

Films of bone-marrow showed many normoblasts of all ages and sizes, a fair number of megaloblasts, and myelocytes, but no parasites.

CASE XIII.—Private D., aged 30 years, had suffered from malaria for six weeks, and stated that he had previously been quite well and in the fighting line. After the fever he became "yellow." He had no diarrhœal or gastric trouble, and no sore mouth. When seen on 21st September, 1916, he was very anæmic. The skin was of a pale yellow colour, and the mucous membranes were very pale. The tongue was clean and the teeth good but for a little tartar and gingivitis of the lower incisors. The spleen was greatly enlarged, extending almost to the umbilicus. It was hard and not tender. The liver was not enlarged. A faint systolic murmur was audible at all areas, most marked at the base, and there was a loud venous hum.

The blood was pale and flowed easily. Films showed much megalocytosis and poikilocytosis, some polychromasia, and the presence of megaloblasts. No parasites were seen.

He began to improve under treatment, and was shortly evacuated on hospital ship.

CASE XIV.—Private B., aged 24 years, was seen on 29th November, 1916. He had suffered from malaria for two and a half months with frequent feverish attacks, evidently subtertian in character. He had received intramuscular injections of quinine, and had recently (June) had a moderate attack of dysentery (Flexner). His skin was yellowish, and his mucosæ very pale but without pigmentation. The tongue was clean but showed old transverse fissures. There was no oral sepsis. A systolic murmur was audible at all areas, and there was a loud venous hum. The spleen was just palpable, and the liver was not enlarged. The stools and urine were normal. Retinal hæmorrhages were present in both eyes.

The blood showed marked poikilocytosis and megalocytosis. There was some polychromasia but no basophilia. Normoblasts and megaloblasts were present in equal numbers. Some very large myeloblasts were seen, but no parasites.

Despite another attack of dysentery and a bout of malaria the patient slowly improved. When last seen on 10th February, 1917, the blood had much improved, and only a few megalocytes and microcytes were to be seen. Poikilocytosis was still present, and some ring staining. There was some pigment in the large mononuclear cells. The spleen was still palpable. He was evacuated on hospital ship.

CASE XV.—Private P., aged 38 years, was admitted on 30th December, 1916, with chronic malaria of five months' duration. This man presented all the signs of a grave anæmia—pale and lemon-yellow skin, marked pallor of the visible mucosæ, a hæmic murmur and venous hum, and a hæmorrhage in the left retina. The spleen was large, extending 2 inches below the costal margin, hard and not tender. The liver was not enlarged. There was no oral sepsis, digestion was good, and the stools normal. The urine contained a cloud of albumen on boiling. The blood was light red and watery. Films stained well with slight polychromasia. There was some poikilocytosis and much megalocytosis. The polynuclear cells varied considerably in size; 13·5 per cent of myeloblasts were present, the highest in the series.

CASE XVI.—Private M., aged 43 years, admitted on 4th February, 1917, had malaria for five months. This was one of the few cases to show a little oral sepsis, which consisted of some caries and a slight gingivitis of the lower incisors. The spleen could just be felt. No parasites were found, but pigment was seen in some large mononuclear cells. The blood showed a few megalocytes and microcytes, but no colour changes. A lymphocytosis was present. A few megaloblasts and normoblasts were present on the second examination. He was improving steadily when evacuated on hospital ship on 3rd March, 1917.

Case XVII.—Private K., aged 40 years, was admitted on 21st January, 1917, and had been ill for three months with subtertian malaria. The spleen was large and hard. Crescents were present in the blood. Retinal hæmorrhages were present. The blood showed a moderate megalocytosis without nucleated red cells, and a lymphocytosis. He improved rapidly under treatment.

Case XVIII.—Private Vladimir S., aged 48 years, admitted on 19th January, 1917, had suffered from malaria for four months. He was a very anæmic man, with a much enlarged, hard, and tender spleen. Retinal hæmorrhages were absent. No parasites were seen, but pigment was present in most of the large mononuclear cells. Megaloblasts and normoblasts were present, and there was a lymphocytosis. He went on hospital ship on 3rd March, much improved.

Case XIX.—Private Dragutin Y., aged 40 years, had malaria for two months, following upon an attack of scurvy. When seen on 30th June, 1917, he was markedly anæmic with hæmic murmurs and venous hum. The spleen was enlarged but no parasites were found in the blood. He was sent away on hospital ship on 1st July, 1917.

Case XX.—Sergeant-Major S., aged 30 years, was admitted on 8th January, 1917, with chronic malaria of four months' duration, and after admission had a mild attack of blackwater fever. He presented the usual signs of grave anæmia, without retinal hæmorrhages, and the blood showed some poikilocytosis, a few megalocytes and a fair amount of ring staining, but no polychromasia or basophilia. Pigment was present in the large mononuclear cells.

Progress under treatment was good.

Case XXI.—Sergeant-Major G., aged 30 years, admitted on

12th March, 1917, with malaria of seven months' duration. The spleen was much enlarged but the liver appeared normal. The red cells stained well without polychromasia or basophilia. There were many megalocytes and some microcytes, and some poikilocytosis. Megaloblasts and normoblasts were present, some showing mitosis. The polynuclear leucocytes varied a good deal in size, and there was an eosinophilia present. Malarial pigment was present in some large mononuclear cells.

He was evacuated on 23rd March, 1917, and was then improving.

CASE XXII.—Sergeant-Major P., aged 45 years, seen on 25th January, 1917, had suffered from malaria from 23rd June, 1916. His anæmia was fairly marked. The skin was yellowish and pale, and the mucosæ pallid. Hæmic murmurs and a venous hum were present, but no retinal hæmorrhages. The spleen was enlarged considerably, hard and not tender. The liver was not enlarged. The blood showed the usual changes, with a few megaloblasts. The chief interest of this case lies in the fact that benign tertian parasites were found in the blood. He was evacuated on the 3rd February, 1917, considerably improved.

There will now be detailed the most important points relating to all the cases of the series.

1. *Colour index.*—Of the twenty-two *severe* cases, the colour index was 1 or over 1 in 15 cases. The highest recorded was 1·5 and the lowest 0·73. The average was 1·04.

Of the 15 *moderately severe* cases, the colour index was 1 or over 1 in six cases, the highest being 1·1, the lowest 0·6, and the average 0·9. Of the forty-three *mild cases*, seven had a colour index of over 1. The maximum was 1·1 and the minimum 0·5. The average, however, was 0·78. It would thus appear that the severer the anæmia, the more does the colour index tend to be high.

2. *Erythrocytes.*—Eight cases had a count of under one

million. The lowest recorded (in Case V) was 404,000, the patient eventually dying. But in Case I the red count dropped to 594,000, and the patient made a good recovery. The twenty-two severe cases had counts of two millions or under, the fifteen moderately severe cases were under three millions, and the forty-three mild cases had counts of from three millions upwards.

The films as a rule stained well. Polychromasia was frequent, but granular basophilia comparatively infrequent. Poikilocytosis was common, but not so frequent as megalocytosis. In the severe cases the latter was marked, and one met all gradations from the presence of a few megalocytes in milder cases to a well-marked megalocytosis in severe ones. The cells were sometimes very large—17 m. to 21 m., and cells of from 10 to 15 m. were common. A few microcytes were common in the severer cases, and sometimes they were numerous. In the severe cases erythroblasts were present in twenty cases of the twenty-two. In two, megaloblasts alone were present, and in four normoblasts. In fourteen both types were present. At the first count, in five cases megaloblasts alone were present. In most, however, the normoblasts equalled or were greater in number than the megaloblasts. In the moderately severe cases, seven showed the presence of normoblasts only, and one equal numbers of normoblasts and megaloblasts. Among the mild cases, Case XV had a few megaloblasts, whilst other three showed normoblasts only.

In some cases the progress towards recovery was indicated by notable increase in normoblasts as in Case IX.

Some of the megaloblasts were very large, the largest measured being 20·38 m. by 15·6 m. Mitosis was frequently seen in the normoblasts, and occasionally in the megaloblasts.

3. *Leucocytes.*—(*a*) In fifty-seven counts in the *severe cases*, the count, as a rule, was low, the minimum being 1,300. As the blood improved the leucocyte count usually rose. In three cases a moderate leucocytosis was noted, regarded as due to the presence of complications.

The polynuclear percentage was in most cases decreased, the lowest being 38·4 per cent. The eosinophiles usually showed a low percentage, but in three cases counts of 4·3, 6·4, and 10 per cent were noted. No high percentage of basophiles was met with.

The percentage of lymphocytes, including both large and small, was increased with few exceptions, the highest count being 48·25 per cent.

The percentage of large mononuclear cells was very variable, but tended to an increase over the normal. The highest was 16·6 per cent.

Myelocytes were noted in nineteen cases, usually in a low percentage, but in one case 4·8 per cent was present.

Myeloblasts were found in all but one case, varying from 0·4 to 5·5 per cent, and in Case XV 13·5 per cent was noted.

(*b*) In the *moderately severe cases*, of seventeen counts, a low leucocyte count was again the rule, and a leucocytosis the exception.

The percentage of polynuclears was decreased, except in Case XIV, where with a total of 3,000 per c.mm. there was 86·4 per cent of polynuclear neutrophiles. The eosinophile percentage was usually below 5, but in two cases over 14 was recorded.

The percentage of lymphocytes varied from 12 to 50·6, but was usually from 28 to 32.

Large mononuclear cells varied from 2 to 20·6 per cent, but were as a rule from 8 to 10 per cent.

Myelocytes were present in eight cases, the maximum percentage being 1. Myeloblasts were seen in all, varying from 0·4 to 6·5 per cent.

(*c*) Of forty-seven counts, in the *mild cases* the leucocyte count tended to be higher. Of the polynuclear cells only two percentages of 70 or over were noted. Twenty cases showed a percentage below 50, the lowest being 21·6. A low percentage of eosinophiles was the rule, but in three cases 9·4, 7·8, and 6·4 per cent respectively were estimated. The percentage of lymphocytes tended to be high, the maximum being 56. There were seven counts over 40 per cent, and thirty of 30 per cent and over.

An increase in the percentage of large mononuclears was more evident in this series than in the two preceding. This was possibly because the infection was more recent. The maximum percentage was 25. There were four counts of 20 per cent and over, six of 15 per cent and over, fourteen of 10 per cent and over, and twelve of 7·5 per cent and over—a total of thirty-six cases with a percentage of 7·5 and over. Myelocytes were present in thirteen cases, the highest being 0·8 per cent.

Myeloblasts were noted in all cases, usually from 1 to 2 per cent, but occasionally higher—3·1, 4, 5, and in Case XXIV 7·5 per cent. In all cases, therefore, there was a lowered percentage of polynuclear leucocytes, and an increase of lymphocytes and large mononuclears. Myeloblasts were present in all cases, and myelocytes were frequently present in small numbers.

4. *Parasites.*—In the severe cases the subtertian parasite was found in five cases and benign tertian in one. Of the remainder of the cases, six had malarial pigment in the large mononuclear cells.

Of the moderately severe cases ten showed parasites, nine subtertian and one benign tertian. Pigment in the large mononuclear cells was seen in two of the remaining cases.

In the mild cases subtertian parasites were found in eight, benign tertian in ten, and a double infection of subtertian and benign in two. Eleven of the remaining cases showed pigment.

Thus in thirty-six cases parasites were found, and the subtertian variety was found in twenty-four. Pigment in the large mononuclears was found in twenty-nine cases.

Most of our cases had received quinine prior to examination, otherwise the percentage of positive results would probably have been higher.

5. *Physical signs.*—The *spleen* was found enlarged in all cases, and in some very greatly so. It was usually hard and frequently tender.

The *liver* was moderately enlarged in six cases, only one of these being in the series of severe cases.

Hœmic murmurs and venous hum were invariably present. In one Case (V) a pericarditis developed. Moderate dilatation of the heart was common.

Retinal hœmorrhages were present in eleven out of twenty-one severe cases examined, and in one of ten moderately severe cases examined. Eleven of the mild cases were examined with negative results.

Oral sepsis was strikingly slight, and no case of "sore tongue" was seen. The Serbs as a rule have good teeth and clean mouths. There was slight gingivitis in two of the severe cases, two of the moderately severe, and four of the mild.

Urobilin was present in sufficient quantity to render the urine dark in three of the severe cases and one of the mild. Otherwise, but for an occasional trace of albumen, the urines were normal.

Intestinal toxæmia was not a feature. Only four cases had diarrhœa, one of these being dysenteric. In the others the stools were normal.

The *diagnosis* seldom presents difficulty. A history of malaria is usually obtainable. The presence of enlargement of the spleen, and the occasional finding of parasites in the blood, or malarial pigment in the large mononuclear cells, will make the diagnosis clear. The knowledge that such grave anæmia does occur after malaria is an important point. Judged by the hæmatological findings alone such cases are often indistinguishable from pernicious anæmia.

Prognosis, as far as could be judged from our small numbers, is good, if treatment be prompt and vigorous. Age, as is to be expected, militates against recovery. The older the patient, as a rule, the slower is the response to treatment.

Treatment.—In addition to the usual hygienic and dietetic treatment, the malarial condition was treated by quinine, either orally or intramuscularly, as indicated.

Arsenic was found to be the most valuable drug in combating the anæmia. When possible, liquor arsenicalis was given orally in steadily increasing doses as in pernicious anæmia, and the results were exceedingly satisfactory. A few of the severe cases requiring more vigorous treatment, or who could not take arsenic orally, were given small doses of kharsivan intravenously with excellent results. Later, cases of a severe nature were treated by intravenous injections of galyl, with equally good results. As the cases improved the arsenic treatment was continued in the form of liquor arsenicalis by the mouth. A small number were given subcutaneous injections of "new cacodyl" which proved efficacious, but no more so than liquor arsenicalis. Kharsivan and galyl were given with the usual precautions, and no alarming or ill effects were experienced. Whether in using galyl the drug not only stimulates hæmogenesis, but also has a destructive effect on the malarial parasites is a question. One of us (A. W. H.) treated a number of chronic malarial infections and one or two acute ones by intravenous injections of galyl, with the effect of causing the parasites to disappear from the blood, and inducing very great benefit for the time the patients were under observation. None of the patients, however, ever reported progress, so it is impossible to say anything as to the permanency of the good results.

Iron was combined with arsenic when indicated by low colour index.

Transfusion of blood was tried in one case, with benefit; the use of rectal salines appeared to be beneficial, and they were frequently employed.

From the foregoing facts it will be seen that a very grave form of anæmia may occur after malaria, and that it closely resembles idiopathic or pernicious anæmia. It may present all the clinical signs and symptoms of that disease, and the blood picture may be identical. Usually, however, the spleen is more enlarged in malarial anæmia, and megaloblasts, as a rule, do not predominate over normoblasts. But they may do so or may be present alone. In the smaller text books but little prominence is given to the occurrence of such a grave form of anæmia after malaria. Recently in a paper read before the Royal Society of Medicine, Castellani calls attention to the occurrence of the "pernicious anæmia type of malaria" in the Balkans. He found the liver enlarged in some cases, more rarely the spleen. In our cases the spleen was invariably found enlarged, and the liver rarely so. Bignami (quoted by Castellani and Chalmers, Osler and Macrae, and Allbutt and Rolleston) states that post-malarial anæmias are generally induced by age, malnutrition, overwork, etc., and are not merely due to the malarial infection. Our cases had certainly been exposed to very arduous active service conditions, and although the average age of the severe cases was 37·8 years, yet many of them were older than their years. Still, there were four severe cases aged from 19 to 25 years, and Case V, a grave anæmia in a young man, had certainly not been exposed to any undue privation. The average age of the moderately severe cases was somewhat lower, 32·8 years, while the mild cases had an average age of 29·9 years. This would tend to show that the anæmia is more severe in the older patients, but this is not necessarily so. An older man may have a very mild anæmia and a young man a very grave one. Bignami recognises four types of malarial anæmia. The first comes on after attacks of ordinary acute malaria, and is characterised by well-marked diminution in the red blood corpuscles, diminution of colour index, the presence of normoblasts, and leucopænia with relative mononuclear increase. Many of our milder cases correspond to this type. The second form is severe and the prognosis is bad. It shows great diminution in the red cells, and the presence of poikilocytes, megalocytes, normoblasts, megaloblasts, leucopænia, and a relative mononuclear increase. Our group of severe cases resembles this type. The third form is rapidly fatal, and is of similar character to the second type but without normoblasts. The fourth type is really grave chronic anæmia resembling the first type, but is specially characterised by paucity of normoblasts and marked leucopænia. We did not meet cases of the last two types. Craig, in Osler and Macrae, mentions that he has had six fatal cases of anæmia in which the red cells numbered 490,000 to 590,000. Poikilocytosis was not common, but anisocytosis was. The leucocyte count was normal but the polynuclears were increased. This form of severe anæmia has been described by Bignami and Bastianelli, and is remarkable in that no nucleated red cells can be demonstrated, due, according to the authors, to the almost complete absence of regenerative power in the blood-forming organs. In both our fatal cases the reaction in the marrow was marked.

Ewing also has described cases of the megaloblastic and of the aplastic type. Stott, in his recent book, describes a case with a red cell count of 1,215,000, and a colour index of 1·6. The highest colour index met in our series was 1·5. It would appear, therefore, that the occurrence of this "pernicious anæmia" after malaria has already received attention from various workers. It is in the hope that the subject may receive wider notice, especially from those at present engaged in military practice in malarious areas, that the present writers publish this article, which owing to military exigencies is necessarily incomplete.

SUMMARY.

I. *Severe forms.*—1. Post-malarial anæmia may assume a grave type characterised by all the signs and symptoms of pernicious anæmia but without evidence of oral or intestinal sepsis.

2. The spleen is enlarged, sometimes considerably so, but the liver is seldom enlarged.

3. The blood shows marked diminution of red corpuscles, high colour index, leucopænia with a relative increase of lymphocytes and to a lesser extent of large mononuclears, poikilocytosis, megalocytosis, polychromasia, occasional granular basophilia, the presence of megaloblasts and normoblasts, and a small percentage of myelocytes frequently, and myeloblasts constantly.

4. Such cases occur most frequently as a sequel of subtertian malaria, but may follow benign tertian.

5. Recovery usually follows prompt and energetic treatment, but death may occur, and the gravity of the prognosis increases with the age of the patient.

6. Treatment by arsenic used as in pernicious anæmia, either as liquor arsenicalis in increasing doses, or galyl or kharsivan intravenously, usually leads to recovery. It should be combined with treatment by quinine, orally or intramuscularly as indicated.

II.—*Mild forms.*—1. The blood shows a less marked diminution of red corpuscles, a low colour index except in a few more recent cases, a less marked leucopænia with a relative increase of lymphocytes, and large mononuclear cells, slight poikilocytosis, occasional megalocytes and polychromasia, rarely granular basophilia, the presence of normoblasts and rarely of megaloblasts, and a small percentage of myelocytes frequently, and of myeloblasts constantly.

2. The average age of the patients is lower.

3. Recovery is the rule.

We are much indebted to Lieutenant-Colonel B. Forde, C.M.G., for permission to publish our results, and to Professor John H. Teacher, Glasgow Royal Infirmary, for the histological work in Case VI.

REFERENCES.

1. Castellani, *Proceedings of the Royal Society of Medicine*, July, 1917, vol. X, No. 9.
2. Castellani and Chalmers, *Tropical Diseases*, Second Edition.
3. Osler and Macrae, *System of Medicine*, 1915, vol. ii, p. 68.
4. Allbutt and Rolleston, *System of Medicine*, vol. ii, part 2.
5. Ewing, "Contribution to the pathological anatomy of malarial fever," *Journ. Exper. Med., N.Y.*, 1902, vol. vii, p. 119.
6. Stott, *Studies in Malaria*, 1916 (Calcutta : Thacker and Spink).

SOAMIN IN THE TREATMENT OF BRONCHIAL ASTHMA.

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THERE are few conditions where a routine treatment is less to be depended on than in asthma. The etiological factors are so numerous that no prophylactic rules can be applied with equal success in all series of cases. When a physician is confronted with a patient suffering from one of the severe paroxysms of asthmatic fits, what does he usually do? He tries to cut short the attack by prescribing one of the "cures" in the form of fumes or inhalations, or gives an injection of morphine, heroin, atropine, or, more recently, adrenaline. During the intervals between the paroxysms he prescribes iodides, bromides, lobelia, &c. These are time-honoured remedies, good in their way, but, so far as cure is concerned, we have made very little progress. Any special line of treatment, therefore, which is calculated to do some good and bring on a distinct improvement of a permanent nature in the patient's condition is to be welcomed.

In an asthmatic attack two factors seem to be constantly present:—(1) The respiratory difficulty is due to spasm of the circular muscular fibres of the bronchial tubes; and (2) the bronchial mucous membrane becomes swollen and hyperæmic. These changes are brought about by any reflex irritation of the terminal branches of the vagus, the irritant operating in the respiratory or gastro-intestinal tract. Certain other conditions are more or less responsible for the paroxysms of asthma. The turgescence or hyperæmia may be the outcome of anaphylactic reaction, or a state of angioneurotic œdema bearing the same relation to the bronchi as urticaria to the skin. Others, again, consider it as an infection arising in most cases from chronic bronchitis. Sometimes it is a early symptom of chronic granular kidney.

The treatment of asthma consists of measures during the paroxysmal seizure, and measures during the intervals between attacks. Considering the fact that during paroxysms the bronchial muscles are in a state of spasmodic contraction, a remedy that will cause relaxation of these muscles is highly indicated. To make a careful and profitable physical examination in the midst of a severe paroxysm is almost impossible. Therefore, we have to adopt such measures as will afford immediate relief. A hypodermic injection of adrenaline chloride solution is perhaps the best remedy to use, as it acts by stimulating the broncho-dilator (sympathetic) nerve endings, and produces a decided relaxation of contracted bronchi. The fact that adrenaline acts best where the condition it is opposing is extreme makes it especially valuable, and the effect on the bronchi is out of proportion to the effects elsewhere, and is often evident even when the arterial pressure is not affected in a measurable degree. This is a great advantage when used in persons suffering from arterio-sclerosis. The effects are little short of marvellous, relief coming on within a couple of minutes. But with all its advantages it is only an emergency drug, and is not a permanent cure.

Treatment during the intervals between paroxysms is, however, less satisfactory. Once the patient has got over the fit, he should be placed on a course of treatment to prevent a recurrence of the paroxysm. For this I have selected soamin. But since it is not every variety of asthma that improves on soamin a selection of cases is necessary; and the cases that improve wonderfully on such a course are those of true bronchial asthma. Some cases have improved on autogenous mixed vaccine, but the percentage is rather small; and I have on record several cases that have improved on soamin but have failed to show any improvement with these vaccines. Some cases may be due to mixed infection, and it is probable that these improve on vaccine. In every case a thorough investigation should be made to find out the cause of irritation giving rise to reflex paroxysms. Some patients are peculiarly sensitive to particular articles of food, and egg-albumen with many aggravates the condition and brings on a paroxysm, just as it gives rise in others to a condition of urticaria, the result in both instances being due to vasomotor disturbance. These patients show marked improvement on a course of calcium lactate and soamin. An increase of eosinophiles is a common accompaniment in most of the cases of true bronchial asthma. On the other hand, there are cases that show no increase at all, and these cases do not improve on soamin. Eosinophilia, therefore, is a factor I consider in the selection of my cases for soamin treatment.

I have adopted this treatment for the last two years, and have kept a record of most of my cases. From the results obtained I am inclined to the belief that in this drug we have a valuable method of treatment for combating this disease. Arsenic, in the form of Fowler's solution, has been used for a long time in the treatment of asthma, but since it was used in combination with other drugs its value has not been pushed home sufficiently before the profession. Soamin, being an organic preparation, has the advantage that it can be used in large doses. Since using this drug I have practically discarded all other methods of treatment, and I have noticed no bad or untoward results like dimness of vision or albuminuria following its use. In favourable cases improvement is observed after the third injection, but generally after the fifth. To ensure success the following points have to be carefully followed:—

1. Proper selection of cases. Only true cases of bronchial asthma should be selected for this treatment.

2. Injection should be preceded by an examination of the blood for eosinophilia. Most cases of true asthma show an increase of these cells. In some of my cases it was 70 per cent.

3. Patients suffering from chronic kidney lesions should be rejected.

Method of administration.—This is always done by hypodermic injection, given at the commencement twice a week, and as the conditions improve, then once a week for two or three injections. If paroxysms do not appear during this period it may be given once a fortnight, and then once a month for one or two more injections. The number of injections varied from six to eighteen, rarely more, to produce total absence of paroxysms. Some of my patients are free from any attack for over one year, when they used to get fits almost daily.

I boil 1 c.c. of water in a teaspoon and then dissolve the soamin (Burroughs Wellcome & Co's tabloids); the solution is then injected into the arm, the part being sterilised by painting with tincture of iodine. The injection is not very painful, and children and women bear it well. Sometimes small nodular masses form at the seat of injection, but these eventually disappear; a feeling of faintness followed in one or two cases on the first day of injection.

Dose.—I begin with 1 grain and increase 1 grain with each injection, till 3 grains are reached. I never had occasion to use larger doses. If the patient does not show any sign of improvement, however small, after the sixth injection, the chances are that there will be no improvement at all.

From the results obtained I can vouch for the superiority of this treatment over any other methods, but bearing in mind the notoriously fluctuating character of the disease, and that there are periods of complete intermissions for weeks and months, during which periods the patients feel completely cured, one may be inclined to think that the results of my observations may have been due to natural cessation. But the results are there, and it is significant how soamin brings them on in most of the cases selected for treatment.

I will give here reports of a few of my cases:—

CASE I.—Chapmann, aged 35 years, tubercular. Suffering from asthma for two years previous to coming to me. Paroxysms coming on almost every night. Had several injections of tuberculin, and every time he had it the paroxysms became worse. *Blood report* (20th February, 1917).—Red blood corpuscles, 4,000,000; white blood corpuscles, 15,000; hæmoglobin, 65 per cent; polymorphonuclears, 36 per cent; lymphocytes, 12 per cent; large mononuclears, 2 per cent; eosinophiles, 50 per cent.

Improvement from soamin after the fifth injection. Had altogether fourteen injections. Free from any attacks for the last six months. *Present blood report.*—Red blood corpuscles, 4,000,000; white blood corpuscles, 7,000; hæmoglobin, 60 per cent; polymorphonuclears, 78 per cent; lymphocytes, 12 per cent; large mononuclears, 8 per cent; eosinophiles, 2 per cent.

CASE II.—Maher, aged 25 years. Several years' duration. Treated with autogenous vaccine for three months, no improvement. Blood report at the commencement:—Red blood corpuscles, 4,500,000; white blood corpuscles, 8,000; hæmoglobin, 75 per cent; polymorphonuclears, 25 per cent; lymphocytes, 7 per cent; large mononuclears, 3 per cent; eosinophiles, 65 per cent. Paroxysms every morning; after third injection severity became less, and after the sixth the paroxysms practically disappeared. Had altogether twelve injections.

CASE III.—Mrs. Roy, aged 28 years. Asthmatic for three years. Attacks not regular, but come on with severity. *Blood report.*—Red blood corpuscles, 4,830,000; white blood corpuscles, 8,470; polymorphonuclears, 29 per cent; small mononuclears, 43 per cent; large mononuclears, 4 per cent; eosinophiles, 14 per cent.

Free from attacks for three months; had altogether six injections.

Obituary.

ON SERVICE.

Captain THOMAS WHITELAW, M.B. Glasg., Royal Army Medical Corps.

We regret to announce the death of Captain Thomas Whitelaw, R.A.M.C., who was killed in action on 7th April. Captain Whitelaw was educated at Glasgow University, where he graduated as M.B., Ch.B. in 1912. Prior to the war he held an appointment as medical officer at Swansea Infirmary. Captain Whitelaw was attached to the West Yorks Regiment, and was killed while endeavouring to find shelter for his men under a heavy bombardment.

Surgeon R. W. BRANDER, M.B. Glasg., Royal Navy.

We regret to announce the death of Surgeon R. W. Brander, R.N., which occurred on 1st May at South Queensferry Royal Naval Hospital, as the result of an accident. Surgeon Brander was educated in Glasgow, and graduated as M.B., Ch.B. in 1914 after a distinguished career as a student. On the outbreak of war he entered the Navy and served in the North Sea and West Indies. He was a son of Mr. George Brander, Procurator Fiscal, Cupar-Fife, and was 25 years of age.

Surgeon-Probationer WESLEY C. HOLDSWORTH, Royal Naval Volunteer Reserve.

We regret to announce the death of Surgeon-Probationer Wesley C. Holdsworth, R.N.V.R., who has been reported as killed in action. He was the youngest son of the Rev. J. Forster Holdsworth, Chaplain to the Forces, and was educated at Glasgow High School and Glasgow University.

JOHN SLOAN, M.B., C.M. GLASG.,
TROON.

We regret to announce the death of Mr. John Sloan, M.B., formerly of Bramley, Leeds. Mr. Sloan was a graduate of Glasgow University, where he took the degree of M.B., C.M. in 1871. He retired from practice some years ago and resided in Troon, where he died on 16th April.

JOHN DREW, M.D. GLASG.,
STIRLING.

We regret to announce the death of Dr. John Drew, which occurred on 11th May at his house "Rudecroft," 28 Dumbarton Road, Stirling. A native of Glasgow and educated at the University there, he graduated as M.B., C.M. in 1869, and attained the degree of M.D. in 1882. Dr. Drew went to Stirling about forty years ago, and was the oldest medical practitioner in the town. He held the post of certifying factory surgeon, and was for a considerable time surgeon to H.M. prison there. He was an ardent antiquarian and prominent member of the Stirling Natural History and Archæological Society.

JAMES WHITEFORD, M.D. EDIN.,
GREENOCK.

We regret to announce that Dr. James Whiteford, doyen and leading member of Greenock medical faculty, died on 24th April at the advanced age of 85 years. He had been in active practice until a few weeks ago. His career was a notable, almost a romantic, one. Having matriculated in Edinburgh University, at the close of his curriculum on being licensed in 1858 he became house surgeon with Lord Lister. In the early sixties he proceeded to America, served in the Civil War, and attained to the rank of surgeon-major. Thereafter he was for some time in South America, returning home and settling down to a practice in Greenock about fifty years ago. No medical practitioner in the district was held in greater respect by the general public or established a sounder reputation in the profession. An acknowledged specialist in certain diseases, he was to the last intimately conversant with the most recent phases of medical science, and was widely called into consultation in cases of crisis.

CURRENT TOPICS.

MEDICAL GRADUATE.—The graduation in medicine which took place a few weeks ago at Glasgow University was designed to supplement the medical services in connection with the Forces, and the ceremony, which took place on 23rd April, consequently fell short of the usual numbers associated with the day before the opening of the summer session in medicine. The only degree of Doctor of Medicine awarded on this occasion was conferred on Margaret Eason Robertson, M.B., Ch.B., with commendation.

GLASGOW UNIVERSITY: OVERCROWDED CLASSES.—At a meeting of Glasgow University Court on 25th April—Principal Sir Donald MacAlister, K.C.B., presiding—a letter was read from Professor Noël Paton calling attention to the great pressure upon the accommodation and the teaching staff in the Physiology Department, owing to an abnormal increase in the number of students. They had been running the class in three sections, and the strain upon the staff was very severe. The only solution of the difficulty was to exclude from the class junior students in histology, whose course would not be retarded though they deferred that subject till next year. The Court, the letter added, would have to face in the immediate future the question of providing more accommodation and an adequate teaching staff. The Principal stated that in the case of botany Professor Bower had 337 students, and was working the class in four shifts, while Professor Bryce had 480 in anatomy. Dr. Hutchison asked if the same state of affairs existed in Edinburgh. Professor Phillimore—The increase is much larger here. Professor Graham Kerr remarked that to repeat laboratory classes three times involved a tremendous strain upon the teachers. The Principal said he desired publicly to acknowledge that the reduced staff were working double and treble time to overtake the work, and were doing it manfully. It was agreed to suggest to the Senate that the practical course in histology be suspended during the present summer session. Professor Noël Paton said he hoped the Court at an early date would consider the second point in his letter.

When the proposed degree in education was under discussion, Professor Graham Kerr said that before they passed from the subject he would like to call attention to the fact that this ordinance marked a very important advance in regard to education in Scotland. Here they had embodied for the first time in a University ordinance recognition of the fact that a knowledge of the principles of biology formed a necessary part of the foundation of any sound educational system. Problems of education, just as problems of sociology, were in their very essence problems in biology, and he thought the University of Aberdeen was greatly to be congratulated on having reached the stage of so fully appreciating that fact as to give it official recognition in its new ordinance.

Professor Noël Paton remarked that the fact that Glasgow had included physiology and hygiene in their degree really made them as wide in their outlook as Aberdeen.

THE UNIVERSITY VOTE.—With regard to the regulations for enfranchisement drawn up under the Representation of the People Act, the Principal suggested that the Court direct the registrar to make up the register in accordance with the terms of the Act and of any Order in Council that might hereafter be issued; that, unless it was necessary under an Order in Council, the ages of graduates should not be printed in the list of those entitled to vote; that it would be unnecessary for any graduate who was a member of the General Council to make personal application to be put on the register; and that graduates who were not on the General Council and were now entitled to vote could apply, if they desired, to be included on payment of the fee of £1 for membership.

INSPECTOR OF ANATOMY FOR SCOTLAND.—The Secretary for Scotland has appointed Norman Walker, M.D., C.M., F.R.C.P.E. Ed., for a period of one year to be Inspector of Anatomy for Scotland, in succession to the late Sir James A. Russell, M.B.

Dr. Walker, who last year was appointed Medical Commissioner in Scotland for the Ministry of National Service, was born at Dysart in 1862. At one time he was editor of the *Scottish Medical and Surgical Journal* and the *Edinburgh Medical Journal.* He has held many appointments in connection with his profession.

Appointments.—The following appointments have recently been made:—

Royal Army Medical Corps: (Territorial Force): Captain J. Strathearn, M.D., F.R.C.S.E. (M.B.Glasg., 1901), to be acting Major while specially employed. To be Lieutenants:—From Glasgow University Contingent O.T.C.—Malcolm Chalmers, M.B.; Arthur Kennedy, M.B.

Volunteer Force (City of Glasgow Regiment): John Hammond Teacher, M.D. (late Surgeon-Captain, 1st Lanark R.E., Vols.), to be Medical Officer and temporary Lieutenant.

Army Medical Service: Lieutenant-Colonel L. W. Harrison, D.S.O., M.B.Glasg. (1895), has been appointed Honorary Physician to the King. .

Honours for Glasgow Graduates.—*Order of Indian Empire:* The King has been graciously pleased to appoint Captain William David Henderson Stevenson, M.D., Indian Medical Service, to be a Companion of the Most Eminent Order of the Indian Empire. He graduated M.B., Ch.B.Glasg. in 1903.

The Military Cross: The Military Cross has been awarded to temporary Captain John Norman Cruickshank, R.A.M.C., of Glasgow. Captain Cruickshank was educated at Glasgow Academy and Glasgow University, graduating in 1916. Attached to a cavalry regiment in France, he was wounded on the Somme in 1916, and again slightly in April of the present year.

The following are the statements of service for which the Military Cross has recently been conferred:—

Captain Duncan Macfayden, M.B., R.A.M.C. (Special Reserve) —He repeatedly went out to shell holes under heavy fire to dress the wounded and help bring them in. He attended to the wounded of another battalion in addition to those of his own. He showed splendid courage and self-sacrifice. Captain D.

Macfayden graduated M.B., Ch.B.Glasg., in 1904, and was in practice in Inverness before war broke out.

The following is a statement of service for which the Distinguished Service Order was conferred on Captain (acting Lieutenant-Colonel) Robert Thin Craig Robertson, M.B., R.A.M.C. (Special Reserve) as announced in January; it will have been observed that since that time he has received a bar to D.S.O.:—When two ammunition lorries were hit by enemy shells he went forward at great risk to where several men had been killed or wounded, dressed their wounds and had them evacuated. He displayed great initiative and coolness.

CASUALTIES AMONG GLASGOW GRADUATES.—The following graduates of Glasgow University are now reported as prisoners of war:—

Captain A. B. Cluckie, M.B., Ch.B.Glasg. (1908), prisoner in Germany. Captain Cluckie, who is a son of the late Dr. Cluckie, eye specialist, Greenock, was reported missing on 25th April. Captain Cluckie, who for a time was engaged on eye work at a base hospital in France, volunteered for service in the front line. Two days before he was reported missing he was decorated with the Croix de Guerre for his attention to French wounded under fire.

Captain John A. Gilfillan, M.B., Ch.B. Glasg. (1914).

Captain D. C. Hanson, M.C., K.R.R.C., previously reported missing, now reported a prisoner of war. Captain Hanson graduated M.B., Ch.B.Glasg. in 1914.

Captain Guy Torrance, M.C.—Information has been received that Captain Torrance, reported missing on 21st March, is a prisoner of war. Captain Torrance is the younger son of Mr. John Torrance, J.P., Shotts.

DIPLOMA IN PUBLIC HEALTH.—At the recent examinations in Glasgow for the diploma in public health of the Scottish Conjoint Board of the Royal Colleges of Physicians and Surgeons of Edinburgh and Royal Faculty of Physicians and Surgeons of Glasgow, the following candidates passed:—Maud Muriel Gavin, M.B., Ch.B., Edinburgh; Gokal Chand Saligal, M.B., Ch.B., Lahore; Michael Wilson Symington, M.B., C.M., Johnstone; Peter Thomson, M.B., C.M., Glasgow. The following candidates passed the first part of the examination:—George King, M.B., C.M., Edinburgh; Elizabeth Clark M'Haffie, M.B., Ch.B., Glasgow; Jean M'Lean, M.D., Dumfries.

IRISH STUDENTS' PLEDGE.—A general meeting of students of Dublin University college declined to avail themselves of any exemption clause applicable to the medical faculty, and pledged themselves to take their stand with the people of Ireland in resisting the enforcement of conscription.

ARRANGEMENTS FOR MEDICAL EXAMINATION OF MEN OVER 43.—The Minister of National Service has issued the following instructions regarding the arrangements for medical examination of men hitherto over military age:—

Under the Military Service Act No. 2 of 1918 National Service Medical Boards will be called upon to determine the physical fitness of men between the ages of 18 and 50 years (in a few cases up to 55). For this purpose the present standards of grading as set forth in M.N.S.R. 24 are to be used. In the case of older men, especially those between the ages of 43 and 50 years, now brought under medical review, the application of the accepted standards will require special care.

Grade I.—The older men will be placed in Grade I if they possess the full normal physical fitness to be expected of their age. Such men must not have any serious physical defect, and must not suffer from progressive organic disease. They must be able to endure physical exertion involving a considerable degree of strain and to undergo gradual physical training in order to fit them for military duty.

Note.—The physical training for the older men in this grade will be carried out under special medical supervision.

Grade II.—The older men fit for Grade II will possess the normal physical fitness of their age. They must not suffer from progressive organic disease, and the physical defects which prevent such men from being placed in the higher grade must not be of such a nature as to diminish seriously their physical activity. They must be able to undergo a considerable degree of physical exertion of a nature not involving severe strain.

Grade III.—In this grade will be placed older men with marked physical disabilities or who show evidence of disease which is not active nor of a progressive character at the time of examination. Although not fit to undergo military training they may be called upon to perform duty in military establishments under conditions approximating to their home life and surroundings.

Grade IV.—In this grade will be placed those older men whose physical disabilities owing to defects or progressive disease are of such a nature as to render them totally and permanently unfit for any form of military service.

Chairmen and members of Medical Boards will observe in dealing with grading of the older men now brought under medical review for the first time that one of the chief factors hitherto determining physical fitness of recruits for the higher grades, namely, that they are young men, is not present. The attention of the Boards will therefore be especially given to the forms of physical disability which may become evident in the fifth decade of life, *e.g.*, cardio-vascular defects, emphysema, &c. It is expected, however, that considerable numbers of men of this age will be found fit for military service, especially of the less arduous type.

Subject to military exigencies, the corps to which the War Office propose to post the older men are as follows:—

(*a*) Combatant service—Home Defence Infantry, and garrison battalions at home and abroad; Royal Field Artillery and Royal Garrison Artillery at home.

(*b*) Auxiliary services at home and abroad, such as:—Royal Army Medical Corps, Army Service Corps, *e.g.*, Motor and Horse Transport, Remounts, Supplies, &c., Army Ordnance Corps, Army Veterinary Corps, Inland Water Transport and Dock, Railway Troops, Roads and Quarries.

Such men will also be posted to the Air Force for duty with the squadrons.

Whenever possible the older men should be called for medical examination separately from the younger recruits. Where there are several boards in one area, one board should be allocated for the purpose of examining the older men only. If there is only a single board, arrangements should be made to call the older men up for a separate session. If any man presenting himself for examination requests an examination in private, every effort must be made to comply with his request.

The Red Cross of the Sea.—Of 4,180 lives rescued off our coasts by lifeboats since the outbreak of war more than 1,400 were sailors, soldiers, doctors, nurses, and others saved from warships, hospital ships, minesweepers, and other vessels which came by misfortune through circumstances directly due to the war. This striking record of service was embodied in the report submitted by Mr. Leonard Gow to the annual meeting of the Glasgow Branch of the Royal National Lifeboat Institution. Lord Provost J. W. Stewart, who presided, congratulated the Glasgow branch on raising a sum of £4,529 last year, this being the next highest contribution to London in the United Kingdom. He expressed pleasure that a pension scheme for dependants of crews had been instituted upon the generous basis provided under the new Royal Warrant for the Naval and Military Forces of the Crown. The institution, he added, was very well named "The Red Cross of the Sea." Sir W. H. Raeburn, in seconding, said he noticed that Mr. Asquith had recently spoken of a movement to have motor boats for life-saving purposes around our coasts. If such a scheme were set agoing, he was sure that shipowners would do their duty in the matter. A letter was read from the Minister of Shipping (Sir J. P. Maclay, Bart.) paying tribute to the value of the services of the lifeboats in these days of abnormal sea perils. Mr. William Martin announced that on 1st June the twenty-fifth annual appeal to the public would be made in the customary form of street collections.

Work of the Red Cross Society.—Sir George Beatson was the principal speaker at a meeting of representatives of the Red Cross Work Parties in Glasgow held on 17th April in the M'Lellan Galleries, Sauchiehall Street, under the auspices of the County of the City of Glasgow Working Parties' Committee of the Scottish Branch of the Red Cross Society. Lady Stirling-Maxwell presided, and among those present were Mrs. Cree, convener of the Work Parties for Scotland, and Miss M. S. Dawson, honorary secretary. Mrs. Cree mentioned that there were in Glasgow 260 work parties, which since the beginning of the war had in gifts sent in no less than 237,000 garments. Altogether since the beginning of the war the organisation in Glasgow had sent out 4,000 "requisitions," containing 2,500,000 garments. Sir George Beatson, in the course of his address, which was illustrated by limelight views, explained the principles underlying the whole of the Red Cross work, why it came into existence, and why it was being carried on. He explained also the great and continuous need of unremitting effort on the part of all the workers.

The urgent need for additional auxiliary hospital accommodation in the West of Scotland is being dealt with by the Red Cross Society, which, through the generosity of private individuals, will shortly open two additional hospitals of this kind. The first of these will be at Hazelwood, Dumbreck, the house and grounds having been presented outright to the Scottish branch by Mr. John B. Shanks. The other auxiliary hospital will be in Warren Park, Largs, sometime the residence of the late Mr. Phillippi, of Messrs. J. & P. Coats, Ltd. This large house and grounds have been purchased by Colonel Smith Park, M.V.O., and gifted to the Scottish branch. Both houses are admirably adapted for the purpose for which they will be used.

The Dowager Countess of Airlie, president of the Forfarshire Branch of the British Red Cross Society, on 11th May formally opened a new Red Cross Auxiliary Hospital at Carnoustie. For the purposes of the new hospital Carlogie House was placed at the disposal of the Red Cross by Lady Dalhousie, and the building, which occupies an ideal situation, has accommodation for forty beds.

THE RED CROSS.—Among the recent subscriptions received by the Hon. Treasurers of the Scottish Branch British Red Cross Society are included a sum of £1,500 from the Airdrie and New Monkland Committee, being a first payment towards Red Cross Week, 1918; and a further sum of £1,000 from the *Glasgow Herald* Shilling Fund. A contribution of £500 has been received from the members and friends of the Scots Church, Rotterdam; and contributions of £131, 2s. 8d. and £58, 9s. 3d. have been received from Kobe, Japan, and Malacca respectively. A sum of £393 has been received from the proceeds of the Rhins Free Gift Sale, and a sum of £50 from Hyndland Bowling Club Ladies' Red Cross Work Party. During the month of March 130,685 bandages, dressings and splints, and 302 packets of cotton wool, &c., were despatched from the Red Cross Central Store for Surgical Dressings. These supplies were obtained from the War Hospitals Supply Depots at Burnbank Terrace and St. John's Road, Glasgow; from the Sphagnum Moss Depot, Renfrew Street, Glasgow; and Eastern District Depot, Edinburgh, &c. The number of requisitions for hospitals and casualty clearing stations outside Scotland fulfilled during this period was 70, consisting of 145 bales. During the same period the Red Cross Sphagnum Moss Depot, Glasgow, received 213 bags of moss and 27,352 muslin bags from work parties. The number of dressings issued during the period was 35,000.

FIRST AID IN SHIPBUILDING YARDS.—The first annual competition for the Shipbuilding and Marine Engineering Ambulance Cup took place on Saturday, 27th April, in the Co-operative Halls, Mansfield Street, Partick. The arbiters were—In general knowledge, Dr. R. T. Halliday; in practical and transport, Dr. P. F. Shaw. Eight teams entered, representative of Fairfield section (two teams), Kingston Yard, Port Glasgow (two teams), Linthouse, Yarrow & Co., Castle Yard and Dockyard sections (one team each). The work all over was of a very high standard. Sir Alexander Gracie occupied the chair, and was accompanied by Lady Gracie, who presented the prizes. Kingston Yard No. 1 team took first place with 183 points, and were presented with a silver cup, also gold badges. Fairfield No. 1 team took second place with 181 points, entitling them to silver badges with gold centres. Sir Alexander Gracie expressed the opinion that employers in the shipbuilding and engineering industries were now appreciating the importance of first aid to their employees, and would give every facility to further the good work.

CAUSES OF INDUSTRIAL ACCIDENTS.—Dr. H. M. Vernon, of Magdalen College, after analysing 50,000 industrial accidents, has presented a report to the Health of Munition Workers' Committee. A speeding up of 10 per cent may well induce an increase of 50 per cent or 100 per cent in the number of accidents at a fuse factory, he says. Increasing inattention arising from thoughts of pleasure to come is another cause of accidents. At a fuse factory when the operatives were working a 12-hour day or 75 hours a week, the women's accidents were two and a half times more numerous than in the subsequent 10-hour day period, but the men's accidents showed no difference. Women were treated for faintness nine times more frequently than the men, and were given sal-volatile 23 times more frequently, whereas in the subsequent 10-hour day period they were treated for faintness and given sal-volatile only three times more frequently.

At all the factories inquired into the night-shift workers suffered fewer accidents than the day-shift workers, the average defect being 16 per cent. This was not due to the output being smaller, as at the fuse factory it was distinctly bigger by night than by day. It was psychical in origin, and due to the night-shift workers settling down to a calmer mental state than the day-shift workers, and so becoming less careless and inattentive.

The temperature at the fuse factory was recorded continuously for six months. Accidents were at a minimum at from 65 to 69 degrees F., and increased rapidly at higher temperatures (*e.g.*, by 30 per cent at temperatures above 75 degrees), and slowly at lower temperatures. Continuous records were obtained of the external temperature of the town in which the shell factories were situated, and it was found that in all of them the accidents increased considerably as the weather grew colder, and diminished as it grew warmer.

In one factory the women's accidents were nearly two and a half times more numerous when the temperature was at or below freezing point than when it was above 47 degrees, whilst the men's accidents were twice as numerous.

NEO-MALTHUSIANISM.—M. G. Richaud, a Juge d'instruction, under the title "A propos de la dépopulation, avortement et infanticide," contributes an article to the *Revue Bleue* for 30th March. He maintains that infanticide is on the increase in France, and there is great difficulty in getting juries to convict. He insists, as Herbert Spencer and others have done before, that the certainty of conviction is a much more serious deterrent than severity of punishment; he proposes accordingly to remove this class of cases from the assize courts and to have them tried by the "juridiction correctionelle," which would be approximately our Sheriff courts. For criminal abortion he advocates a double reform; he would bring this class also before the "tribunaux correctionels," and would also grant a pardon to every woman on whom abortion had been practised if she denounced the authors of the action before she had herself been prosecuted. He also suggests abolition of professional secrecy so as to get medical evidence, but finds the opposition of the profession in France too strong. As has been pointed out in this *Journal*, all recent attempts at repressive legislation in this matter have been immediately followed by a great increase in neo-Malthusian propaganda.

Infantile Welfare in Germany: Conditions during the War.—The Intelligence Department of the Board of Trade has issued a White Paper on Infant Welfare in Germany during the war, in which it is pointed out that the most striking fact is the heavy fall in the number of births. The first three years alone of the war reduced by over 2,000,000 the number of babies who would have been born had peace prevailed. Some 40 per cent fewer babies were born in 1916 than in 1913. The infantile death-rate has been kept well down. In the months immediately following the outbreak of war there was a sudden rise, but for the years 1915 and 1916 it was markedly reduced, at least in the towns, partly by the special measures which were taken, largely also no doubt because of the cool summers. High though the death-rate was in the months immediately after the outbreak of war, it was not so high as in the very hot months of 1911, when the heat and dryness proved more fatal even than the cataclysm of war.

The most noteworthy measure taken for infant welfare is the special grants to women who give birth to children. One of these grants is given only to women who breast-feed their babies. The improvements in infant welfare during the war have been effected principally in the towns, although efforts are being increasingly made to extend the work to rural districts. In a large number of these districts, however, conditions are lamentably backward and the death-rate very high. In oontrast to this country, the infantile death-rate in Germany in the country districts is higher than in the towns. In Britain the infantile death-rate is some 50 per cent lower than it is in Germany.

UNIVERSITY FOR AMERICAN FRONT.—Last month we drew attention to the article by "B. E. F." in the *Glasgow Herald*, in which he expressed the belief that there was a tendency among our soldiers to lose touch with intellectual work, and expressed his grave fears that many on leaving the army would find themselves quite unable to resume the same class of work that they had formerly undertaken. It is interesting to observe that the Americans are already taking steps to meet this difficulty.

Mr. E. C. Carter, general secretary of the Y.M.C.A., has begun the organisation of a University behind the American front in France. Classes in divers subjects will be conducted in the various Y.M.C.A. huts already existing, or which will in the course of time be erected in France. Mr. Anson Stokes, who has for years been connected with the administrative organisation of Yale University, has been appointed temporary general director, and the actual work of instruction will be carried out by Association field secretaries and by soldiers with sufficient leisure and the necessary acquirements.

While we may congratulate the Americans on the promptitude with which they make arrangements to meet the educational requirements of their soldiers, we must consider the news a clear indication that they do not anticipate an early cessation of hostilities.

In our own army, although we have not as yet made any real attempt to carry on the work of a University near the front, unless we are to consider the addresses delivered by chosen lecturers to be of that nature, arrangements, it is understood, have been completed in Scotland for enabling officers temporarily unfit for general service to start or resume professional or commercial studies interrupted by the war. The scheme, which has been operating successfully for some months in England, is being worked meantime with Edinburgh University as its centre and headquarters, but the University authorities in Glasgow, and indeed the governing bodies of many teaching institutions—technical, agricultural, and business—throughout the country, are loyally co-operating in the movement. Officers likely to be unfit for a period of four to six months or more after discharge from hospital can under the arrangement take out classes in almost any branch of study with a view to qualifying for degrees and diplomas required in the civil professions. The machinery is also to be used for assisting into work of national importance suitable to their particular qualifications officers who are permanently unfit for service. Already, particularly in Glasgow, employers have offered to take a large number of such men. During training officers will continue to wear their uniform and draw army pay and allowances. The organisation is under the direction of the Ministry of Munitions.

THE CONSUMPTION CRUSADE.—Sir Robert Philip, M.D., who was appointed to the newly instituted Chair of Tuberculosis in the University of Edinburgh, delivered his inaugural lecture in the M'Ewan Hall, Edinburgh, on 16th April. The chair was taken by Principal Sir Alfred Ewing.

In introducing the new Professor, the Chairman said the creation of the Chair of Tuberculosis was unique. There was no other Chair of Tuberculosis in the world. It was eminently fitting that there should be one in Edinburgh of all places, because the Edinburgh system of dealing with that fell disease was now known as the Edinburgh system and copied as the Edinburgh system all over the world. There had been placed in the chair the man who created that great organisation—the man to whose imagination and scientific insight, power of organisation, energy, and unfailing tact the whole Edinburgh system for dealing with tuberculosis was due.

In his address, which was upon the subject of "The Present-Day Outlook on Tuberculosis," Professor Philip said the ravages of tuberculosis were still appalling, but they were being met. The Registrar-General's figures for 1915 of deaths from pulmonary tuberculosis were, in England, 41,676 persons, representing a death-rate of 116 per 100,000 of the population, and, in Scotland, 5,291, or a death-rate of 111 per 100,000. The comparable death-rate figures in 1890 were for England 168, representing a drop of 30·9 per cent, and for Scotland 193, a fall of 42·4 per cent. As to treatment, the prospect was full of hope. The fact was realised that no disease was more tractable than tuberculosis, if its character was recognised sufficiently early. Half of them in that hall were cases of arrested tubercle. The cure of tuberculosis was closely linked with its prevention. With the continuance of the war there had been traceable in some parts of the country an increase of the death-rate from tuberculosis. But one encouraging fact had emerged during the war, namely, that the British Forces had suffered less than those of the Continental Powers. France had suffered in this respect infinitely more than Britain. This had been associated with the fact that in Britain the problem had been efficiently met before the war, while in France there had been practically nothing done. In the variability of its expression, in the methods of diagnosis and prognosis, and in the far-reaching questions of prevention and treatment, tuberculosis afforded a fine object-lesson in medicine. Its teaching was not limited to tuberculosis —it was luminous with principles which gave just proportion to the facts of disease and inspired fresh effort towards the realisation of the ideals of health.

THE ROYAL SAMARITAN HOSPITAL FOR WOMEN, GLASGOW.— The annual meeting of the subscribers was held on 16th April, and the Lord Provost took the chair.

In the annual report it was stated that the total number of patients treated during the year was 3,555. The ordinary income was £7,472, and the ordinary expenditure £8,197, leaving a deficiency of £724, which was met out of extraordinary. income.

The Chairman, in moving the adoption of the report, said the hospital had a claim on the philanthropic people in the city who recognised their obligations as citizens and their duties as Christians. They were told that after the war there might be expected a great social reconstruction. It was impossible to believe that there would not be a broader and more sympathetic spirit of citizenship based probably on the sufferings which every section of the community had had to endure, and upon the sacrifices which had been made, but there was no reason why they should delay the growth of that spirit until after the war, because there was in the hospital and kindred institutions the opportunity for helping those whose needs were the greatest and whose ability to help themselves was the least. The hospital was doing national work in restoring mothers to their families in healthy condition, and thus giving the children every chance of growing up to vigorous manhood and womanhood. That work was going on now to repair the ravages of war.

The report was adopted.

Medical Students and Military Service.—In reply to a question in the House of Commons on 2nd May, Mr. Beck said that the present position of medical students in relation to military service is determined by National Service Instruction 35, of 1918, and the Army Council Instruction 153, of 1918. Under the former fit men who were at the date of the instruction —5th March, 1918—full-time medical students at a recognised medical school, and who either had passed the whole of the first professional examination in chemistry, physics, and biology (or botany and zoology). or who are certified as being able to pass the whole of that examination on or before 31st July, 1918, are exempted from military service under certain conditions—(1) as to the efficient prosecution of their studies, and (2) as to training in an officers' training corps. On completing their second professional examination, such students, if physically fit, are required to serve as surgeon-probationers in the Navy. Students in Grade III subject to similar provisions as to work and training are not to be called up without reference to the Ministry of National Service so long as they remain full-time students. Under Army Council Instruction 153, of 1918, men serving with the colours who had immediately prior to enlistment been whole-time medical students at a recognised medical school for at least six months, and had passed the whole of the first professional examination, may, on application, be released from the colours in order to resume their medical studies. Medical students who do not fulfil the conditions of exemption are posted to the Army in the ordinary way, and not necessarily to the R.A.M.C.

It would appear, however, from a letter which has appeared in the *Glasgow Herald* that some medical students have recently been sent abroad although they have already passed the first professional examination. The writer says:—

"The greatest injustice is being inflicted upon a number of whole-time medical students, who, though getting well on with their studies, and arriving toward the end of their first year, nevertheless, early in 1917, at the urgent solicitation of the authorities, who were gasping for officers, without waiting to be conscripted, voluntarily attested directly they came of age and were passed into the O.T.C. Some of them, however, during their training kept on with their studies as far as possible, with the result that they passed half through their first professional last year and finally passed the whole of it in March this year. After receiving their commissions, but evidently with a view to their eventual release to resume their studies according to the new 'instructions,' some of the students had been allowed leave in order to sit and complete their first professional as aforesaid, only to find themselves already under orders for France on returning to their headquarters. In France, therefore, they have been ever since, and all their applications, in proper form through their C.O. accompanied by the requisite certificates, for release to resume their studies, so far ignored. If the new 'instructions' were not to be carried out, why were the lads allowed leave to sit for the professional?"

The following letter appeared a few days afterwards in which the writer brings forward other causes of complaint against the Medical Service Board:—

"Strong as the case is that 'Vindex' made out in your columns, a still stronger case could be made against the present arrangement for exempting first-year medical students. The arrangement gives not only preferential treatment to certain medical schools, but also penalises those first-year medical students who voluntarily rushed to arms at the call of their country. While, as may be judged from the matriculation lists, our medical schools are to be used as funkholes under the plea that the dearth of doctors makes this exemption necessary, first-year students of 1915 and 1916 who did not wait to complete the whole of their first professional examination, but joined the colours as soon as they were 19, these after suffering two or three years of the hardships and hazards of war are to be passed over for younger lads who have done nothing for their country and who cannot really qualify any earlier. My object in writing is to appeal to all persons whose sons have been ruled out under the present system to call the attention of their local members of Parliament to the unfairness of the Medical Service Board."

Professor Bryce, of Glasgow University, then published the following letter, which at least suggests a probable explanation of the action of the authorities with regard to certain of the cases complained of:—

"A good deal of misapprehension seems to exist regarding the release of medical students from the combatant branches of the Services to continue their studies and the exemption of the younger men by the Ministry of National Service. Perhaps you will permit me therefore to state shortly what the position actually is.

"1. No man who has graduated in medicine within the last four years has entered civil life, unless he suffered from some serious medical disability. On the day of his graduation every man has automatically passed into H.M. Forces either on sea or land.

"2. Any release of men on service to continue their studies, or any exemption of men actually engaged on their studies, has been dictated by the public interest solely, the immediate object being to recruit the ranks of the medical services of the Navy and Army.

"3. This being so, the principle that has ruled all Army Council Instructions has been the release or exemption of the men who could in the shortest time become available for the medical services of the Navy and Army.

"4. As the war drew out, and the fourth and fifth year men were all drafted into H.M. Forces, it became necessary, owing to the depletion of the third year by some 80 per cent to 90 per cent, to release third year men already on service; and recently it has been found necessary to extend this to second year men.

"5. Owing to the urgent need of the Admiralty for surgeon-probationers, the release of second year men has been somewhat extended, and a National Service Instruction was issued on 5th March, 1918, for the exemption of men who had not yet been called up. Under this, men who had then actually become second year students by having successfully passed the whole of the first professional examination, or who, being actually engaged on their studies, can pass the whole of this examination by 31st July, 1918, are temporarily exempted in order that they may complete the second professional examination at the first opportunity, and then take service as surgeon-probationers in the Navy.

"6. This National Service Instruction applies solely to men who entered on their studies not later than October, 1917. No others can fulfil the conditions or meet the immediate necessities of the State.

"7. No medical student physically fit for combatant service who entered on his studies later than the date of the Instruction will, as I am authoritatively informed, be exempt from such service, whatever examinations he may have completed prior to being called up, under any decree or instruction hitherto issued.

"8. All men of military age who are temporarily exempted under the Instruction are required to combine military training with their professional studies in order that they may be ready for service when called up at the appropriate stage in their curriculum."

In the case of men who volunteered while first-year medical students, it is probable that the view of the authorities is—These men are now trained soldiers and are immediately available. If they are returned to their studies we cannot hope to get their services as surgeon-probationers appreciably earlier than we may hope to get the same services from the young men who are at present at home as first-year students, and during that time we lose them as soldiers.

This is certainly very hard treatment for these volunteers, but in time of war it is evident that the State cannot consider individual interests, and their interests are sacrificed to meet the requirements of the country. Why students who have already passed their first professional examination should have been sent abroad as combatants, in view of the Instruction of 5th March, 1918, is more difficult to guess. One would imagine that they would be more valuable as surgeon-probationers next year than they are likely to be as junior combatant officers now, and that the interests of the nation would be well served by retaining them for the present.

REVIEWS.

A Text-book of Surgery. By RICHARD WARREN, M.D., M.Ch. Oxon., F.R.C.S. Two volumes. London: J. & A. Churchill. 1915. (25s. net.)

THE aim of Mr. Warren in his *Text-book of Surgery* is to present a concise account of modern surgery from the standpoint of the general surgeon. The publishers claim that with the publication of this book, by a surgeon of the London Hospital, "British readers will now have, from the centre of the Empire, a really modern and authoritative work." Such a claim demands from the reviewer a close examination into its justification, and to such an examination we have accordingly subjected the volumes.

Even a superficial survey shows that much of the irrelevant matter which in the past has so overloaded text-books as to make them anything but well-balanced works of reference has been rigidly excluded, and that the author has kept in view throughout his intention of placing before readers the more practical aspects of surgery, with just the necessary minimum of theoretical explanation.

The three sections of the first volume are devoted to general considerations, the skeleto-motor system, and the surgery of the nervous system and ear. Most of the material here is disposed of in the manner we are accustomed to term "systematic," and although, as has already been suggested, there is very little that has not a direct bearing on practical surgery, still nothing strikingly original is observable.

The author is, in our opinion, much more at home with the matter of the second volume, and particularly when dealing with abdominal work. We are impressed by the moderation of his views even though he does not lack firmness in giving them expression, and we are in entire agreement with most of his methods of operating. But the general possibility of keeping pace with his hands seems to us somewhat questionable.

Appendicectomy is, according to the author, an operation of from seven to fifteen minutes' duration, and gastro-enterostomy adds but fifteen minutes to the time required for stitching a perforated gastric or duodenal ulcer. Many no doubt may be able so to work, but we question the wisdom of dogmatising to readers on such matters.

Mr. Warren rather favours spinal anæsthesia in serious abdominal cases, a view which has not met with approval by more than a minority of operators, but we are content to leave the question to the discretion of individuals.

The book is quite modern, makes instructive reading, although the descriptive style would scarcely be termed literary, and can be recommended to practising surgeons and juniors with that specialty in view. Better text-books for undergraduates, however, might be named.

The Operations of Surgery (*Jacobson*). Sixth Edition. By R. P. Rowlands, M.S.Lond., F.R.C.S.Eng., and Philip Turner, B.Sc., M.S.Lond., F.R.C.S.Eng. Two Volumes. London: J. & A. Churchill. 1915. (£2, 2s. net.)

Messrs. Rowlands and Turner are privileged in being selected as successors to their revered senior at Guy's Hospital, Mr. Jacobson, in carrying on the latter's now famous work on operative surgery.

The editors of this new issue have felt no call to depart from the arrangement devised by Mr. Jacobson, which has served so well through five editions, but they have subjected the book to a rigid revision, and have entirely re-written such parts as could not otherwise be brought up to date.

The Operations of Surgery is intended primarily for surgeons who have been appointed to hospital staffs, but those who have to operate without the conveniences afforded by a well-equipped institution will also find the work a valuable possession.

All important operative procedures are described in full detail, and instructions are provided for the overcoming of common as well as unusual difficulties. For those who are not yet familiar with this excellent treatise it may be pointed out, in illustration of the thoroughness with which each operation is discussed, that thirty-two pages are devoted to removal of the breast, sixteen to the surgical treatment of appendicitis, and eighteen (with twenty illustrative figures) to the radical cure of inguinal hernia, yet the style throughout is clear and the matter interesting, with never a suspicion of heaviness.

No work of this nature would be complete without a good gynæcological section, and in the present instance that part has been supplied by the able hands of Mr. G. Bellingham Smith.

We have to congratulate Messrs. Rowlands and Turner on the results of their labours, and have pleasure in recommending "Jacobson's" as a first-rate work.

A Short Practice of Midwifery. By HENRY JELLETT, B.A., M.D.Dublin University, F.R.C.P.I. With a Preface by Sir W. J. SMYLY, M.D., F.R.C.P.I. Seventh Edition, Revised. London: J. & A. Churchill. 1918. (12s. 6d. net.)

THE author has seen this seventh edition through the press while he is at the front. Corrections and alterations have thus been made under difficult conditions, and this may account for the repetition of a very serious mistake to which we drew attention in our review of the previous edition. In the treatment of eclampsia the author states that Jardine recommends the transfusion of a solution containing bicarbonate of potash. This is a mistake, and a very serious one, as the author states that the solution may be given directly into the blood-stream. We believe that, if a pint of such a solution were thrown into the blood-stream, paralysis of the heart would be brought about. Jardine's solution consists of a drachm of sodium chloride, and the same of sodium acetate to the pint, and this may be given through a vein with perfect safety. The author makes no mention of the use of veratrone which so many observers regard as one of the most useful drugs in the treatment of this terrible complication.

Many new illustrations have been added to the book, and we can cordially recommend it, but we trust nobody will give a trial to an injection of a potash solution into a vein.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

OBSTETRICS AND GYNÆCOLOGY.

Epistaxis in Pregnancy. By Dr. B. Solomons, of Dublin (*Dublin Jour. of Med. Science,* March, 1918).—Dr. Solomons' patient was a healthy primi-gravida, who had, however, had her nose cauterized six years earlier on account of epistaxis. At the end of the eighth month of pregnancy she wrote that her nose was bleeding, and he advised her to come into town, when he found that it had already bled several times, and was now bleeding profusely ; the nose was plugged several times with adrenalin on gauze, but the hæmorrhage soon recurred on removal of the plug. The posterior nares were also plugged, and the patient was delivered of a still-born child. Morphine in two doses of one-sixth gr. each had been given to overcome the distress caused by the plugging.

Dr. Solomons discusses the cause of the death of the fœtus, and queries the morphine, the amount of the maternal hæmorrhage, the shock of repeated pluggings of the nares, and also the administration of a dose of coagulose ; as against this last, he maintains that horse serum in large amounts is tolerated by babies. The nose is normally hyperæmic in pregnancy and epistaxis is not uncommon, and Dr. Solomons asks for suggestions for treatment of similar cases.

The discussion of his paper by the Royal Academy of Medicine of Ireland did not, however, throw any light on the management of this condition.

—E. H. LAWRENCE OLIPHANT.

Corrosive Sublimate Poisoning. By Dr. G. FitzGibbon. (*Dublin Jour. of Med. Science*, April, 1918).—The patient was a married woman, aged 32 years, who had introduced a tabloid of 8·75 grains of sublimate into her vagina to prevent conception. She was seen four hours later suffering from severe pain in the vagina. No trace of the tabloid could be found in the vagina, which was dry, hot, and tender, but without any appearance of ulceration. A prolonged and copious douche was given. Dr. FitzGibbon gives a detailed account of the daily progress of the case. In spite of all attempts to re-establish the renal functions, the patient gradually sank into a uræmic state ; though in the last few hours there was a little urine excreted, it was probably water merely without solids. The vagina sloughed deeply, but the necrosed tissues did not separate; there seemed always deeper sloughs below the surface. She ultimately died on the eleventh day. In a similar case that Dr. FitzGibbon found recorded, the patient died on the tenth day, though treatment had been begun about eight hours after the insertion of the poison into the vagina.

In view of the failure to re-establish the functions of the kidneys and to eliminate the poison, Dr. FitzGibbon suggests it might be advisable to try to remove the whole of the mucosa of the vagina so as to prevent the absorption of the mercury.—E. H. L. O.

Puerperal Eclampsia. By Dr. Cragin, of New York (*Trans. American Gynecological Society*, 1917).—The chief object that Dr. Cragin sets before him is the avoidance of shock and trauma in the treatment of these cases. He compares the results in his first 20,000 cases at the Sloane Hospital with his last 15,774 in the same institution. In the first series there were 251 eclamptics, with a maternal mortality of 28·3 per cent, while in the second the mortality fell to 14·5 per cent. The respective infantile mortalities, including babies dying during the mothers' stay in hospital, were 60·15 per cent and 44·9 per cent. He ascribes his improved results in the first instance to the use of ether as an anæsthetic instead of chloroform, which last tends to affect the liver and so increase the damage to that organ, especially in the hepatic type of case associated with the presence of acetone and diacetic acid. He has further given up the use of blood-letting. He does his utmost to establish proper elimination and to terminate the pregnancy with as little shock as possible, making use of soft bags to dilate the cervix, irrigating the colon with nine gallons of saline or soda solution, and quieting the patient with chloral or morphine. He has also abandoned vaginal Cæsarean section entirely, and the abdominal section, except in a few cases where the os is small, with rigid cervix.

In the discussion which followed, there was naturally some difference of opinion. Dr. Whitridge Williams still employed venesection, but had abandoned the use of veratrine. Dr. Davies, of Philadelphia, urged the addition of oxygen to the anæsthetic; he also made use of venesection followed by injections of salt or soda solutions, with avoidance of all depressants, even the hot pack. He thinks the administration of sterile horse-serum is of advantage in reducing the subsequent risk of multiple thrombosis and embolism. There was a general agreement that prophylaxis was the most hopeful line of treatment.

—E. H. L. O.

Books, Pamphlets, &c., Received.

Nutrition and Clinical Dietetics, by Herbert S. Carter, M.A., M.D., Paul E. Howe, M.A., Ph.D., Howard H. Mason, A.B., M.D. Philadelphia: Lea & Febiger. ($5·50.)

Diseases of Children: A Manual for Students and Practitioners, by George M. Tuttle, M.D., and Phelps G. Hurford, M.D. Third edition, thoroughly revised and enlarged. Illustrated with 47 engravings and 3 plates. Philadelphia: Lea & Febiger. 1917. ($3·50.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 25TH MAY, 1918.

	Week ending			
	May 4.	May 11.	May 18.	May 25.
Mean temperature, . .	44·4°	50·0°	52·8°	59·1°
Amount of rainfall, . ins.	0·41	0·70	0·65	0·54
Deaths (corrected), . .	320	429	423	381
Death-rates, ...	15·0	20·1	19·8	17·8
Zymotic death-rates, . .	1·7	2·4	2·6	1·9
Pulmonary death-rates, .	3·8	4·3	5·8	5·0
Deaths—				
Under 1 year, . . .	52	58	61	45
60 years and upwards, .	71	104	103	96
Deaths from—				
Small-pox, ...	...	...	...	...
Measles, ...	22	25	33	24
Scarlet fever, . . .	1	...	2	...
Diphtheria, . . .	3	6	1	2
Whooping-cough, . .	11	20	21	10
Enteric fever, . . .	...	2	...	1
Cerebro-spinal fever, . .	1	...	...	2
Diarrhœa (under 2 years of age),	5	3	3	3
Bronchitis, pneumonia, and pleurisy, . . .	61	77	107	91
Cases reported—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	3	1	3	2
Diphtheria and membranous croup, ...	39	27	36	30
Erysipelas, . . .	12	12	8	17
Scarlet fever, . . .	26	26	17	28
Typhus fever, . .	1	...	4	10
Enteric fever, . . .	4	4	1	4
Phthisis, ...	48	54	73	42
Puerperal fever, . .	2	3	2	2
Measles,*	562	522	594	520
Ophthalmia neonatorum, .	14	18	14	6

* Measles not notifiable.

Sanitary Chambers,
Glasgow, 30*th May*, 1918.

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